BOSE INSTITUTE
KOLKATA

Ref: Tender No. BI-K/E-TEND/09/2020-21

Amendments as per pre-bid resolutions with reference to the pre-bid conferance held online on 02.02.2021 at 03.30 PM (IST)

Members Present from buyer end:

1. Thomas Hahn
2. Valentin Plyuskin
3. Launnis T Shokanos
4. Hoerst Welker
5. Sanjay K Ghosh
6. Supriya Das
7. Subhashis Chattopadhay
8. Sougato Banerjee
9. Raju Chandra Paul

Bidders Present:

1. Siechem Technologies Pvt. Ltd.
2. Vindhya Telelinks Ltd.
3. CMI Ltd.
4. SBEE Cables India Ltd.
5. Radiant India
6. Universal Cables Ltd. India

Sl. No	Reference of the Tender Document				Bidder`s Query	Resolution
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1	Chapter-I ITB, GITB		B,d	As per Govt. Notification # 45/2017 dt.14th November, 2017, Scientific Research Institute funded by the Govt. of India, GST will be applicable @5% for the goods used for Research Purpose, for the bids where GST will be applicable, against DSIR Certificates to be provided by the Institute.	For the purpose of better clarity, request re-confirmation that the same is not applicable at all since the tendered items as per its scope are required to be delivered at FAIR-Germany and not at BI-IFCC at Kolkata, India. Accordingly, the BOQ columns in excel sheet are required to be modified.	GST Certificate to be provided by the Institute.
2	Chapter-I ITB, GITB		2	Brief Technical Specifications of Co-axial Cables	The brief technical specifications of Co-axial cables mentioned under this clause are of generic in nature and have no binding on the bidder whatsoever for the purpose of evaluation of the tender. Request advice that our understanding is in order.	No Change.
3	Chapter-I ITB, GITB		7	Transportation and Shipment	As per Chapter-1, ITB, GTIB Cl. No.1, the delivery schedule indicated is: 1. Pre-series (Prototype) of the cables of all four sizes shall be manufactured for FAT within 5 months from the date of PPO. 2. Completion time for bulk part of cables of all four sizes shall not be more than 4 months from FPO date. Hence, we note that the bulk part of cables be offered on FOB Indian Port basis and not on delivery at FAIR site in Darmstadt, Germany designated space at its site. Request your confirmation of the same as it has the financial implications as well time limits w.r.t. contractual obligations.	Delivered to FAIR site in Darmstadt, Germany.
4	Chapter-II ITB		7.4 (iii)	Rates should be quoted onsite FAIR/GSI, Germany, inclusive of packing, forwarding, etc. Break-up of ex-works prices are to be quoted with packing, forwarding, documentation, freight and insurance charges. Vague terms like packing, forwarding, transportation etc. extra without mentioning the specific amount/percentage of these charges will NOT be accepted. Such offers shall be treated as incomplete and rejected. Where there is no mention of packing, forwarding, freight, insurance charges, then, it will be assumed that same is already included in the quoted price.	In view of the clarifications sought on the clarity of delivery point i.e. BI-IFCC Kolkata or FOB Indian Port or CIF Germany or Delivery up to FAIR / GSI designated site space, The indicated BOQ columns along with the currency of the bid for the corresponding components are required to be modified. Request clarification(s) suitably.	Delivered to FAIR site in Darmstadt, Germany.

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5	Chapter-II ITB		8.1	Prices shall be quoted in Indian Rupees Only.	In continuation to the clarification(s) sought under Sl. No.4, the various component currencies are required to be modified as in INR and USD/EURO.	Quoted in INR, USD/EURO to be converted in INR.
6	Chapter-II ITB		25.1	The format of the agreement will be provided to the successful bidder only.	Unless otherwise, if any strategic or confidential nature of conditions are involved in the agreement format, the same is requested for sharing to understand that it will have any un-acceptable conditions or provisions. Request for provision of the same like any other format related to a tender or contract at the tender stage itself.	Agreement will be made as per the terms & Condition mentioned in the Tender Document & Prebid Resolution.
7	Chapter-II ITB		26.17	Within 15 days from the date of acceptance of award, the successful Bidder shall furnish the performance security equivalent to 3% of the total order value in the form of Account Payee demand draft, Fixed Deposit Receipt, Bankers Cheque or Bank Guarantee of any commercial bank as mentioned in Performance Security Form (Chapter-VII).	Request clarification that it is applicable for Final PO (FPO) for bulk manufacture and not for Provisional PO (PPO) for prototype manufacture.	Only for Final Purchase Order for the bulk supply.
8	Chapter-III GCC		1.1 (ii)	The Goods means all the materials, which the Supplier is required to supply to the Purchaser at indented site under the Contract. Here final destination of the supplies is FAIR site in Germany.	The final destination of the supplies may please be corrected here too in line with the final clarifications as the same was requested for in other queries of this document.	Delivered to FAIR site in Darmstadt, Germany.
9	Chapter-III GCC		1.1 (iii)	Services means services ancillary to the supply of the Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other obligations of the Supplier covered under the Contract.	For the sake of clear understanding, we note that there no ancillary service(s) to the supply of the Goods whatsoever is/are associated in the scope of this tender. If any, the same may please be notified to estimate their cost in the bidding process itself. Request required clarification.	Installation & commission is not in the scope of the bidder.
10	Chapter-III GCC		5.1	The supplier shall indemnify the Purchaser against all third-party claims of Infringement of patent, trademark or industrial design rights arising from use of the Goods or any part there of India.	Usage of the tendered goods or any part thereof is intended to be used in India as well as in Germany. This may please be corrected suitably.	India as well as in Germany.
11	Chapter-III GCC		8.1	The Purchaser or its representative shall have the right to inspect and/or to FAT test at manufacturer`s site the Goods to confirm their conformity to the Contract Specifications at no extra cost to the Purchaser. SCC, the Technical Specifications and the relevant clause(s) the agreement, shall specify what inspections and tests the Purchaser requires and where they are to conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representative(s) retained for these purposes.	The costs related to any tests whatsoever be in India or overseas, all costs other than the cost of cable(s) sample(s) is/are required to be in the Purchaser`s account only as the same appears to be specified by the Purchaser at the time of ordering in the Order i.e. PPO and FPO along with all the costs related to any representative(s) retained for these purposes by the purchaser. Request clarification as these have the cost implications.	To be borne by supplier, No of members from India will be 03 & Germany 03.
12	Chapter-III GCC		10.1	The place of delivery of the equipment is FAIR, GSI, Darmstadt, Germany.	The final destination of the supplies may please be corrected here too in line with the final clarifications as the same was requested for in other queries of this document.	FAIR site in Darmstadt, Germany.

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13	Chapter-III GCC		14	The general conditions of payments for the Prototypes and Bulk supply are 100% payment within 45 days from the date of successful acceptance. Payment will be considered only after satisfactory SAT tests of the same at Darmstadt, FAIR, GSI, Germany.	This may please be amended as hereunder for proper and smooth progress of the contract: a. For Prototypes: 100% payment including all taxes against successful completion of the FAT within 30 days from the date of dispatch of these prototypes final accepted quantities to BI-IFCC, Kolkata, India.	For both prototype & bulk supply 100% payment including all taxes will be made after successful completion of the SAT. Payment will be released within 45 days of submission of Tax Invoice to BI-IFCC, Kolkata India along with SAT clearance certificate.
14	Chapter-IV SCC		3.1	After the goods _____ ----------. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser`s site at the time of submission of order acceptance.	Request to confirm that it is not the scope of the supplier as installation is beyond the scope of this tender.	All arrangement to be done by supplier for FAT
15	Chapter-IV SCC		3.5	Successful conduct and conclusion of the site acceptance test for the installed goods and items shall also be the responsibility and at the cost of the Supplier.	Request to treat the same is not the scope of the Supplier of this tender.	All arrangement to be done by supplier for SAT at the storage location of FAIR Germany.
16	Chapter-IV SCC		11.1	For delays: GCC Clause 21.1 – The applicable rate is 0.5% per week or part thereof and the maximum deduction is 10% of the contract price.	Request for correction of this as "The applicable rate is 0.5% per week or part thereof and the maximum deduction is 05% of the basic value of the delayed portion".	No change
17	Chapter-V Bid Form			Having examined the bid documents the receipt of which is hereby duly acknowledged, 1/We agree to furnish required supplies / services in conformity with the Techno-Commercial Bid. I/We agree to hold this offer open until and to supply, install and commission the equipment and complete the whole of the work and hand over to the purchaser within the period of year / month, from the date of receipt of intimation from you regarding acceptance of this tender/receipt of supply order. I/We agree to submit the bank guarantee as specified in SCC in the form prescribed by your good selves for the due performance of the contract, if our bid is accepted. I/We understand that you are not bound to accept the lowest or any bid you may receive.	Request correction to this as here under: Having examined the bid documents downloaded by us from your tender portal, the receipt of which is hereby duly acknowledged, 1/We agree to furnish required supplies / services in conformity with the Techno- Commercial Bid. I/We agree to hold this offer open until and to supply, install and commission the equipment and complete the whole of the work and hand over to the purchaser within the Delivery Period of the contract, period of year / month, from the date of receipt of intimation from you regarding acceptance of this tender/receipt of supply order. I/We agree to submit the bank guarantee as specified in SCC in the form prescribed by your good selves for the due performance of the contract, if our bid is accepted. I/We understand that you are not bound to accept the lowest or any bid you may receive.	Installation & commission is not in the scope of the bidder. So the relevent text of the bid form should be modified as: Having examined the bid documents the receipt of which is hereby duly acknowledged, 1/We agree to furnish required supplies in conformity with the Techno-Commercial Bid. I/We agree to hold this offer open until..... and to supply the item within the Delivery Period of the contract, from the date of receipt of intimation from you regarding acceptance of this tender/receipt of supply order. I/We agree to submit the bank guarantee as specified in SCC in the form prescribed by your good selves for the due performance of the contract, if our bid is accepted. I/We understand that you are not bound to accept the lowest or any bid you may receive.
18	Chapter-VII		2	PERFORMANCE SECURITY FORM 10%	Request correction of the same as 3%	Performance Security 3%
19	Chapter-VII			BIDDER`S PERFORMANCE STATEMENT FORM (For a Period of Last 5 Years)	Since numerable orders were placed during the last 5 Financial Years by various buyers which are of 100% are of supply scope only for cables, furnishing that large data is not likely possible. Hence, the same is required to be limited to an extent of five to ten large orders received and executed on a representation basis without the last column i.e. "Has the equipment been installed satisfactory? (Attach a certificate from the Purchaser)" as well with the 3rd Column being "Date of completion of delivery as per contract/actual". Request confirmation.	As it is supply has been successfully executed (certificate from Purchaser)

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				1. The Bidder should be an Indian Manufacturer to quote in this tender.	In order to avoid restrictive bidding practice(s) / to ensure wider participation with the most competitive bids as per CVC guidelines Circular No.12-02-1-CTE-6 Dt.17.12.2002, in order to ensure participation of the reputed and capable firms like us too with proper tract record, keeping the scope of the tender i.e. Design, Development and Manufacture of High Current Co-axial Cables on Proto-type + Bulk Manufacture basis, to meet all the specified technical parameters, this is required to be corrected as hereunder: Bidder should be a manufacture of high current co-axial cable having manufacturing facility located in India and must have experience of cable manufacturing with XLPE insulation with CCV (Continuous Catenary Vulcanization) / with XLPO insulation with Electron Beam Curing at least for 10 years as on date of bid submission, out of which at least 5 years' experience in manufacturing cables with LSZH sheath which should be established by providing documentary evidence. The Bidder shall submit satisfactory order completion documents such as inspection reports/material dispatch clearances/supply	This cable specification has been designed considering the best existing techniques and recognize good design practices available in India. This cable will be used in FAIR accelerator system with interruptions free area for 30 years in very critical operation covering high radioactive zone especially in tunnel. This cable shall be designed for fixed instillation for a life time of 40 years. This cable shall be suitable for continuous operation with operating high currents whilst any ambient temperature in the range of -15 deg C to +30 Deg C. This cable continuous operation for up to 6000 operating hours in a year and to achieves maximum homogeneity. Therefore Electron Beam curing process is must, so there will be no change.
20	Chapter-IX PQR		11.1	8. Indian manufacturers having Atomic Energy Regulatory Board (AERB) approval for Electron beam facilities for a minimum of 10 years from the date of tender due and in operational for manufacturing electron beam cross linked cables.	In case of Electron beam facilities, the Indian manufacturers having Atomic Energy Regulatory Board (AERB) approval for Electron beam facilities for a minimum of 10 years from the date of tender due for its operational condition for manufacturing XLPO insulation with electron beam cross linked cables be submitted.	Indian manufacturers having Atomic Energy Regulatory Board (AERB) approval for Electron beam facilities for a minimum of 05 years from the date of tender due and in operational for manufacturing electron beam cross linked cables.
				12. Experience of having successfully completed similar works during last 7 (Seven) years ending last day of month previous to the one in which applications are invited should be either of the following (satisfactory completion certificates issued by the client to be attached); (i) Three similar completed works costing not less than the amount equal Rs. 26 Crore each. (ii) Two similar completed works costing not less than the amount equal Rs. 39 Crore each. (iii) One similar completed works costing not less than the amount equal Rs. 52 Crore. Definition of "Similar Works" i.e. the Manufacturer "shielded high current sheathed co-axial copper cable" during last five years, for any government sector or large reputed private sectors	Since the entire scope of this specific tender is to " Design, Development, Manufacture, Test and Supply" of these tendered very specific Shielded High Current LSZH Sheathed Flexible Co-axial Copper Cables, the specified requirement appears to be defective and not in order. Hence, in order to exhibit the manufacturing capabilities, the bidder may be called upon to submit / provide a representative order / execution / feedback report copy of at least one order for establishing his capabilities on manufacturing (concentric / coaxial cables with primary conductor plus secondary conductor with 185 sq.mm (minimum) of voltage rating not less than the voltage rating of 1.8 kV during the last 10 years for any Govt. / Private sector Companies satisfactorily.	Documents for manufacturing experience for (same size cable mentioned in tender document) High Current LSZH sheathed cable cured by Electron beam process amount of Rs.20 crores + solvency + Turn over .
21	Table-2, Annexure - I			Cable Type Column: RF	We note it as "Round Form" and not as "Radio Frequency" as detailed in IV Abbreviations Annexure – II General Specifications Request clarification that our understanding is in order.	Round Fine stranded, according to Class 5 (table 3 of IEC60228)

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22	Annexure - 1		4.3	Radiation Resistant: The cable shall withstand a dose limit of X1 x 106 Gy. X Based on information provided by CERN, a XLPE insulating compound will withstand a dose of about 8 x 105 Gy, while a co-polymer sheathing compound on the basis of Ethylene-Vinyl Acetate (EVA) will withstand a dose limit of 1 x 106 Gy similar to High-Density Polyethylene (HDPE). In case another co-polymer compound than EVA is utilized for the LSZH sheath, the Contractor shall provide a certificate approving the equivalent radiation resistance of the utilized material.	We note that when any other co-polymer material other than EVA or HDPE for LSZH sheath is used, the Contractor is required to provide a certificate approving the equivalent radiation resistance for a dose limit of 1 x 10^6 Gy of the utilized material. Request clarification that our understanding is in order.	No change.
23	Table-3, Annexure – I, No.1			**Parameter** : Basic Cable Design	In order to ensure / to avoid i.e. to ensure the most competitive bids / to avoid the restrictive bidding practice(s) as per CVC guidelines, the specification / Value column stipulation is required to be corrected as here under: Coaxial cable with primary conductor and secondary conductor of same size, both with XLPE insulation with CCV (Continuous Catenary Vulcanization / XLPO with Electron Beam curing), plus an additional static screen and LSZH sheath.	No change.
				Specification / Value : Coaxial cable with primary conductor and secondary conductor of same size, both with XLPE insulation with Electron Beam curing, plus an additional static screen and LSZH sheath		No change.
24	Table-3, Annexure – I, No.3			Parameter : Rated Voltage (rms)	In order to have very clear understanding, request correction of the Specification / Value column as: Uo : 1.8 kV (between primary conductor and secondary conductor as well as between secondary conductor and corrugated – cu tape i.e. static screen)	No change
				Specification / Value : Uo : 1.8 kV (between primary conductor and secondary conductor as well as between secondary conductor and static screen)		
25	Table-3, Annexure – I, No.4			Under short circuit conditions ($t_k \leq 5S$)	Request confirmation of the duration of short circuit time in seconds and not as ≤ 5S as it has the cost implication as well as aid in the cable design in spite of the fact of the indication that the static screen i.e. corrugated – cu tape is not required to withstand short circuit current nor provide radially water tightness as indicated in Table-4.	No change
26	Table-4, Annexure – I,			Cable Component Dimension / Details	As indicated at Sl No.23, the specified Dimension / Details column stipulation is required to be corrected as here under: XLPE with CCV (Continuous Catenary Vulcanization / XLPO with Electron Beam curing Process, suitable for operating Voltage Uo = 1.8 kV rms) XLPE with CCV (Continuous Catenary	No change
				Nominal cross section (mm^2) 50 - 95 - 150 - 185		
				1st insulation layer : XLPE with Electron Beam Curing Process, suitable for operating Voltage Uo = 1.8 kV rms		
				1st insulation layer : XLPE with Electron Beam Curing Process, suitable for operating Voltage Uo = 1.8 kV rms		
				Cable Component Dimension / Details	As indicated at Sl No.22, the specified Dimension / Details column stipulation is required to be corrected as here under: The material of the sheath shall be HDPE / EVA based Polyolefin compound / other suitable compound applied uniformly and symmetrically by extrusion	No Change

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27	Table-4, Annexure – I,			Nominal cross section (mm²) 50 - 95 - 150 - 185		
				Sheath : The material of the sheath shall be a polyolefin compound applied uniformly and symmetrically by extrusion.		
28	Table-4, Annexure – I,			Cable Component Dimension / Details	Since provision of all these details by means either by embossing or by indentation is not technically feasible. The same shall be provided by printing. Request confirmation	no change
				Nominal cross section (mm²) 50 - 95 - 150 - 185		
				Marking Every meter, by embossing or indentation: - Cross sections of primary and secondary conductor - Voltage rating (i.e. : Uo = 1.8 kV rms) - Year of		
29	Annexure – I, 5.2.3 Additional mechanical tests			While special terminations for these cables have been developed, these terminations need to be tested based on IEC 61238-1, Clause 7. The Company will deliver for each cable type (see Table 2) ten sets of special terminations and a specific test procedure. The termination shall be fixed to one cable end and a pulling force to Table 6 shall be applied to the secondary conductor.	In order to understand and have the confidence on compatibility of these developed special terminations by the Company, dimensional drawings may please be shared along with the specific test procedure for ensuring the right bidding practice in terms of understanding as well as involvement of any special tools / tackles required for fixing these special terminations etc. and all the costs related with the delivery of the ten sets of these special terminations / each cable type etc. along with the cost of each cable length consumed in this additional test is/are to be the account of the Owner / Company. Please clarify.	No change
				Table 6 : Additional Mechanical Tests on special terminations		
				Cable Component Mechanical Stress		
				Nominal cross section (mm²) 50 - 95 - 150 - 185		
				Tensile force (kN) 3.0 - 5.7 - 9.0 - 11.1		
				The tested terminations must withstand this force and must not strip out from the cable. The Company reserves the rights to participate in these tests		
30	Annexure – I, 5.2.4 Additional thermal tests			In order to safeguard the reliability of the individual cable types with respect to the rating, thermal tests free in air at an ambient air temperature of 30° C shall be conducted on each cable type of the pre-series production. The cables shall be loaded with the relevant maximum currents as per Table-5 i.e. 215A, 340A, 450A & 540A respectively. The temperature on the primary conductor`s surface, on the secondary conductor`s surface and on the outer sheath shall be measured. Beyond thermal equilibrium, the temperatures of both conductors are not allowed to exceed the maximum permissible conductor temperature in normal operation of 90° C as given in Table 3. Alternatively, the Contractor can present detailed numerical calculations, allowing to check the results in a step-by step way. The Company reserves the rights either to participate in these tests or alternatively will check and the presented calculation results.	Since these individual cable types are required to be loaded with the relevant maximum current i.e. 215A, 340A, 450A & 540A by special means while the ambient air temperature of 30°C by induction heating of the test area, the same arrangements are not feasible at the manufacturing premises. Hence, the same shall be carried out at an approved outside Indian Lab such as CPRI-Bangalore / Noida, where the cost of each cable length consumed in this additional test including testing charges is/are to be the account of the Owner / Company. Please clarify.	No change

Sl. No	Reference of the Tender Document			Item	Bidder`s Query	Resolution
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31	Annexure – I, 8. Related Documents			[1] F-GS-F-01e : General Specification [2] F-TG-ET-01e : Electrical Design Rules and Regulations	In order to ensure that all guide lined rules and regulations are kept in consideration for Designing aspect which is an integral part of the scope of this tender, the copies of these documents may please be shared.	Documents attached,
32	Table A2 : Test Requirements for LSZH2) sheathing Compound			Electric Water Absorption Test Treatment:	Since it is a long duration test, request clarification whether the same is required to be performed on each size of cable during Prototype Series Production as well as during Bulk Production stages on sizes of these tendered four sizes of cables.	No change
				Temperature °C 24±5		
				Duration days 14		
				Test Voltage (1 min) V 500DC		
				Insulation resistance MOhm*km corrugated – Cu tape to water >40		
				2) To be performed on a fully assembled cable		
33	Annexure – II General Specifications 3.3.4.3			For workers of the Contractor or from other external companies the same rules apply as for employees of the Company. In addition with every external company a contract has to be established which settles the apportionment with Company in terms of radiation protection like personal dosimeter, mutual exchange of dose values, instructions and training.	In terms of the safety of the workers of the contractor while it is appreciated, but expect a free training and Orientation by the Company at free of cost without affecting the contractual delivery schedule(s) of the Contract in nature. Please clarify.	Training will be for free for needed safety scopes, given by FAIR or appointed people (GSI). Usually 1-2 h. Places for storage, handling, testing will be shown and explained. For this contracting scope no work in radioactive areas is needed.
34	Annexure – II General Specifications 4.4.3			The contractor may at any time suggest modifications to the details as found in the drawings and / or specifications. In each case, the Contractor shall inform the Company and seek for a written approval. The Contractor shall remain responsible for the construction, assembly and delivery in compliance with the specifications.	In terms of the complexity of this project along with the scope of this specific tender, as well as in line with the classification of requirements outlined in this Annexure-II, 2.2, the requirement i.e. "The Contractor shall remain responsible for the construction, assembly and delivery in compliance with the specifications" is required to be limited only to "delivery in compliance with the specifications" and not for "construction and assembly". Please clarify.	No change of tender document. To interprete as the process realizing the scope of the contract.
35	Annexure – II General Specifications 5.3.4.7			Tools / equipment and facilities for the tests shall be kept for three years after the final acceptance of all components free of charge and such that they are protected from corrosion, theft, and distraint. Subsequently, they shall be delivered to the Company or shall continue to be stores for a fee. The Contractor shall invoice the storage expenses to the Company	The intent of this is not understood properly. Hence, this is requested for elaboration to avoid any disappointment in future at the project site. In our opinion this may not be applicable and is not an integral part of this tenders` scope. Please confirm./clarify.	No change of tender document. To understand , the tools needed if warranty conditions are claimed for reproducing cables (24 months=2y) or In case we will ask for more cables (newly to contracted then) in the 3rd year to ease processing.
36	Annexure – II General Specifications 6.3			TÜV or LGA expert opinions.	In terms of the complexity of this project along with the scope of this specific tender, as well as in line with the classification of requirements outlines in this Annexure-II, 2.2, the intent and content of this is not understood properly. Hence, this is requested for elaboration to avoid any disappointment in future at the project site. In our opinion this may not be applicable and is not an integral part of this tenders` scope. Please confirm / clarify.	To correct: LGS -> LGA; TÜV: https://en.wikipedia.org/wiki/Technischer_Überwachungsverein / LGA: https://en.wikipedia.org/wiki/Landesgewerbeanstalt_Bayern; both are: "independent service companies from Germany and Austria that test, inspect and certify technical systems, facilities and objects of all kinds in order to minimize hazards and prevent damages"
37	Annexure – II General Specifications 7.2			The terms of delivery shall be carried out according to the STC of the Company, the Technical Guidelines (e.g. [12], [13], [14]), and the German Packing Ordinance. All delivery shall be covered by DDP, INCOTERMS 2010. In the case of deviations, they are separately specified in the contract.	In order to ensure that all guide lined rules and regulations are kept in consideration on this aspect, the copy of German Packing Ordinance may please be shared.	To be confirmed by FAIR Germany team, The three TG's are provided as attached documents, only [12]: TG-T-01e is needed for this scope; **contrary** to the General Specification the delivery shall be as **DAP according Incoterms 2010**. STC will be
38	Annexure – III Format of Technical Details Table -1			Radiation resistant test Certificate as per para 4.3 of Annexure – I (To submit after PO) Will be/not be provided	Request clarification in conjunction with the query sl no.22 of this document.	No change

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39	Annexure – III Format of Technical Details Table -1			Radiation resistant test Certificate as per para 4.3 of Annexure – I (To submit after PO) (Attached/Not Attached)	Since these are of very specific in nature, complying to this intended requirement at the bid submission stage is not technically feasible. Hence, this may please be deleted.	No change
40	Annexure – III Table -2 : Types of Co-axial cables and their quantity offered			In Cable Type Column: RM	The expansion of RM may please be indicated for our correct adaptation since the same was indicated as RF at other place in the tender documents as outlines at Sl. No. 21 of this document.	Round Fine stranded, according to Class 5 (table 3 of IEC60228)
43	Chapter – I ITB			Sl. No. Particulars Date & Time	In view of the various clarification(s) / confirmation(s) / Data / Document(s) requested through this Pre-Bid Query Document, request that the existing calendar of events to this tender may please be extended by 30 days from the date of issue of these clarification(s)/confirmation(s)/Data/Document(s) to enable us to submit our most comprehensive technical as well the most competitive commercial bid.	To be decided later
				9 Bid Submission closing (On line) 22.02.2021 (18:00 Hrs)		
				10 Bid Opening date for Technical Proposals (On line) 24.02.2021 (14:00 Hrs)		
44				Sr.no. 3. Bidder should be a manufacturer of high current co-axial cable having manufacturing facility located in India and must have experience of cable manufacturing by Electron Beam curing Facility at least for 10 years as on the date of bid submission, out of which at least 5 years' experience in manufacturing cables with LSZH Sheath should be established by providing documentary evidence.	Bidder Request: Required cable can be manufactured without E Beam curing meeting the standards mentioned in your tender. So, E-Beam facility as mentioned in this clause should be deleted.	No Change
45				Sr.no. 4. Bidder shall submit satisfactory feedback reports for Electron Beam Cross Link LSZH Sheathed material supplied to 2-3 reputed clients	Bidder Request: Since the enquired cable can be manufactured without E Beam curing, hence this clause should be deleted	No Change
46				Sr.no. 8. Indian manufacturers having Atomic Energy Regulatory Board (AERB) approval for Electron beam facilities for a minimum of 10 years from the date of tender due and in operational for manufacturing electron beam crossed linked cables	Bidder Request: Since the enquired cable can be manufactured without E Beam curing, hence this clause should be deleted.	No Change
47				Sr.no. 12. Experience of having successfully completed similar works during last 7 (Seven) years ending last day of month previous to the one in which applications are invited	Bidder Request: Since these type of special construction cables shall be manufactured for the first time in India, so a similar type of manufacturing experience is not possible.	See Sl. No. 20
48				Regarding SAT	We will offer Factory Acceptance Test (FAT) as per your requirement mentioned in tender before despatch only. Any electrical test at site is not possible as we do not have facilities available at site	All arrangement to be done by supplier for SAT at the storage location of FAIR Germany.
49					For Site Acceptance Test (SAT), only physical approval can be done.	No Change, Details are given in the Tender Document
50					Your tender calls for only supply of item which is High Current LSZH cable cured by Electron Beam Process and hereby there is no scope of installation and commissioning. Hence we request you to exclude words vit installation and commissioning in any clauses mentioned in your said tender document	See Sl. No. 09
51					Based on our standard or Normal Business understanding, eligibility criteria stipulated in this tender is as similar to construction Tender where to find out capable EPC contractor, most of the Project authorities require high numbers in experience criteria nearer to value of the project. But for supply tenders, such volume criteria is very rare may be almost nil. Hence we request you to reduce eligibility criteria.	See Sl. No. 20

Sl. No	Reference of the Tender Document				Bidder`s Query	Resolution
	Part / Vol	Page No	Cl No	Item		
52					Please note that we being an oldest manufacturer of such Electron beam cable, we are having enormous experience to prove us excellent in this field. We suggest you to count on manufacturing experience for High Current LSZH sheathed cable cured by Electron beam process per year instead of single order bearing such high values.	See Sl. No. 20
53					We may also suggest you to find out such manufacturers who have supplied such LSZH high current electron beam cables in huge volume being used in critical applications, of PSUs for Government of India especially in Ministry of Defence and Indian Railways	See Sl. No. 20
54				Point no. 3 where the tenderer is asking for 10 years E Beam Facility operations and 5 years for E Beam LSZH cable manufacturing	Our remarks: OUR E-BEAM FACILITY IS OPERATIONAL SINCE 21.06.2019. OUR e-beam CABLE MANUFACTURING EXPERIENCE SHALL ALSO BE COUNTED FROM THIS DATE ONLY. Moreover hardly there are 2-4 companies in India have this facility. Required cable can be manufactured without E Beam curing meeting all the international standards, why this is required, we could not understand	See Sl. No. 20
55				Point no. 12 is asking SIMILAR WORK Execution experience where we do not qualify.	Our remarks: In our view these type of special construction cables shall be manufactured in India for the first time so a similar type of manufacturing experience is not possible. We have all the machinery available to manufacture these types of cables. We may qualify if it is changed to copper cable manufacturing (without e-beam curing) which we & many other manufacturers can satisfy. we shall submit samples(5 m)of offered cables along with tender as required, which may please be examined for our capabilities.	See Sl. No. 20
56					Your page no. 40 regarding Integrity pact. Last para: Please confirm whether the integrity pact signed on non-judicial stamp paper to be sent to your office for your signature and seal before tender? Whether your office will return the same back to us with your approval before the tender due date to attach the same along with tender documents?	Yes you can send the Intigrity Pact to our office for signature from our end. You have to ensure that your representative should collect the signed intrigity pact from our office and uplode the same along with the bid.
57					page no.48, Clause no.13. Latest bank solvency certificate. The word may kindly be amended as either "Solvency certificate from bank without mentioning amount or letter from bank mentioning that the bidder currently having fixed deposits over Rs.70 Crores".	standard language and protocol of Bank will be accepted.
58	Page - 5, Table - 1			1x50 RM/50		1x50 RF/50
				1x95 RM/95		1x95 RF/95
				1x150 RM/150		1x150 RF/150
				1x185 RM/50		1x185 RF/50
59	Table - 5 (Annexure -III)			1x50 RM/50		1x50 RF/50
				1x95 RM/95		1x95 RF/95
				1x150 RM/150		1x150 RF/150
				1x185 RM/50		1x185 RF/50
60	BOQ (Item Code)		1.01	1x50 RM/50		1x50 RF/50
			1.02	1x95 RM/95		1x95 RF/95
			1.03	1x150 RM/150		1x150 RF/150
			1.04	1x185 RM/50		1x185 RF/50

Title:	**General Specification** (General Specification for the FAIR Accelerator Facility Project)
Purpose:	Common rules and definitions
Organizational unit:	– FAIR@GSI Project Coordination – Configuration Management (PCCM) – FAIR Technical Division
Valid for:	FAIR Accelerator Facility Project
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Preface

In 2011 the first version of the General Specification for the FAIR accelerator complex has been released. A small group has been mandated to revise the General Specifications in 2013/2014.

The revision group thanks the authors of the previous versions for their great work and is particularly grateful to the experts for their input, comments, and fruitful discussions.

Contributors to the FAIR General Specification are R. Bär, C. Betz, W. Bonin, P. Busch, W. Jacoby, F. Gabriel, O. Geithner, P. Grunenberg, T. Hahn, A. Harer, K. Höhne, B. Kern, O. Kester, H. Kolb, A. Krämer, D. Krämer, H. Ramakers, M. Schwickert, P. Spiller, D. Urner, U. Weinrich

Table of Contents

1. Introduction

FAIR, Facility for Antiproton and Ion Research is a new multipurpose accelerator facility for the research with antiprotons and ions. The FAIR accelerator complex provides beams of antiprotons and ions with highest intensities, energies, and power in brilliant quality and for parallel operation. In consequence, FAIR will provide worldwide unique accelerator and experimental facilities allowing for a large variety of unprecedented fore-front research in physics and applied science.

2. Definitions

2.1 Definitions

The contracting body is either the GSI GmbH or the FAIR GmbH defined as the **"Company"**.

The **"Contractor"** is the provider in case of an in-kind contribution (IKC) or a commercial company, identified by the tendering process, hereinafter referred to as the "Contractor".

The **"contract"** is concluded between the Company and the Contractor. In case of an in-kind contribution the shareholder is a third contracting party

2.2 Classifications of Requirements[1]

"Shall" or **"has to"** or **"must"** or **"is required to"** are used to indicate mandatory requirements, strictly to be followed in order to conform to the standard and from which no deviation is permitted.

"Shall not" or **"must not"** means that the definition is an absolute prohibition of the specification.

"Should" or **"is recommended"** is used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others or that a certain course of action is preferred but not required.

"Should not" or **"is not recommended"** means that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighted before implementing any behaviour described with this label.

"May" or "might", which is equivalent to **"is permitted"**, is used to indicate a course of action permissible within the limits of the standard.

2.3 Systematic of Specifications

A **"Detailed Specification"** specifies the purpose of the component, its detailed features, and information to design and produce it.

[1] See also http://standards.ieee.org/develop/policies/opman/sect6.html

A **"Common Specification"** is a set of definitions, prescriptions and rules valid for a technical system (e.g. the magnets, the vacuum system or the cryogenic system). It covers common technical aspects.

The **"General Specifications"** is a comprehensive set of definitions, prescriptions and rules, which is valid for all accelerators and storage rings, technical systems and components of the FAIR project. It covers mainly administrative and organizational topics, e.g. general aspects of safety and quality assurance.

"Technical Guidelines" specify rules of technical aspects which have to be respected by correspondent technical systems.

The ranking of the documents is specified in the contract.

3. Legal Requirements, Standards and Internal Regulations for Safety

3.1 Legal Requirements

3.1.1 The applicable law has to be adhered. In particular but not exclusively it is referred to the laws and directives in Annex I.[2]

3.1.2 The Contractor has to declare, that his deliveries and duties comply with the legal requirements.

3.1.3 The Company has the right to verify if the Contractor complies with the legal requirements. In case of identified deficiencies the Contractor commits himself immediately and free of charge to eliminate them.

3.1.4 A CE declaration of conformity is required, unless German law allows different confirmations. In this latter case compliance with German standards is compulsive.

3.2 General German Safety Regulations

3.2.1 Relevant rules to be considered are international and German standards (e.g. ISO, IEC, DIN, VDE) and the Berufsgenossenschaftliche Vorschriften (BGV) and are given in particular but not exclusively in Annex II.

3.3 Internal Safety Regulations

3.3.1 General Remarks

3.3.1.1 The regulations regarding the safety of the accelerator and the human being must be followed by the Contractor; they are given in particular but not exclusively in Technical Guidelines and Specifications.

3.3.1.2 The Contractor shall submit in a document latest after fixing the design of components (CDR accepted, milestone S002.M6 in Table 1) all safety relevant data. The document will be checked by the Company's safety office.

[2] Further Information are given online http://bundesrecht.juris.de

3.3.1.3 Every device has to adopt a technically safe state in case of fail function. This comprises the contact safety as well as measures against unintended switch on via the control system. Exceptions have to be agreed upon by the Company.

3.3.1.4 The language for all operating panels must be English (preferred) and German if possible. Solutions for a later translation must be prepared.

3.3.1.5 Warning signs and other safety-critical notes must be in German and in English.

3.3.1.6 Devices installed in highly activated areas shall be removable by means of remote handling.

3.3.4 Remarks for Humans and Environment

3.3.4.1 The radiation safety for humans and environment is subject to the German Radiation Protection Ordinance and in particular to the responsible radiation protection authority which is the Hessian Ministry for Environment, Energy, Agriculture and Consumer Protection (Hessisches Ministerium für Umwelt, Energie, Landwirtschaft und Verbraucherschutz).

3.3.4.2 Workers carrying out work at the FAIR accelerator complex at radiation controlled areas must be educated and trained in radiation protection techniques and fulfil the given radiation protection and entrance requirements.

3.3.4.3 For workers of the Contractor or from other external companies the same rules apply as for employees of the Company. In addition with every external company a contract has to be established which settles the apportionment with Company in terms of radiation protection like personal dosimeter, mutual exchange of dose values, instructions and training.

4. General Design Aspects

4.1 Reliability

4.1.1 The FAIR accelerator system is planned to be operated with only few weeks of interruptions per year. The projected lifetime of the system is about 30 years. The components placed in the accelerator tunnels will not be accessible during operation. Even during shutdown time access to components might be very limited due to remaining activation in the tunnels. Intervention time on accelerator components in service rooms will also be very limited.

4.1.2 Therefore, all components shall be rated for continuous operation (up to 6000 operating hours per year with virtually no interruption for 30 years)[3] at all power output levels, taking care of the worst case of mains and environmental conditions and with minimum of maintenance. The Contractor shall therefore rate all components accordingly and use the most appropriate materials.

[3] In this context continuous operation is defined as continuously operating in its standard scheme, this could also be, e.g. a pulsed operation scheme.

4.1.3 All equipment shall be designed in accordance with the best existing techniques and recognize good design practices available at the time of design. In particular the worst-case design principle has to be used, that is, the Contractor shall deliver the risk assessments with the components.

4.2 Design Principles

4.2.1 The Contractor guarantees that the materials used and manufacturing processes are in compliance with the Detailed Specifications, the Common Specifications, the Technical Guidelines, the drawings, and the documentation at all stages of the project.

Provision of material certificates is not sufficient to discharge the Contractor from his guarantee that the materials used is in compliance with specifications.

4.2.2 The metric system is the mandatory system to be used. Exceptions have to be agreed by the Company.

4.2.3 The colours of accelerator magnets are standardized throughout the Company [1].

4.2.4 Materials near the beam pipe shall have a high level of radiation hardness [2].

4.2.5 In general, uncertified semiconductor components shall not be used in the tunnel or other radiation areas.

4.2.6 The mechanical design must comply with the requirements of the Design Guideline [3].

4.2.7 The electrical design must comply with the requirements of the Electrical Design Rules and Regulations [4].

4.2.8 All components connected to the FAIR Ethernet communication network must comply with the technical guideline [5].

4.2.9 All components to be integrated into or connected to the accelerator control system must comply with the standards defined in technical guidelines [6], [7], [8] and the control system Common Specification [9].

4.3 Maintenance

4.3.1 The FAIR is a unique accelerator facility. Scientists from all over the world will use extensively the experimental opportunities at FAIR. The operating costs of such a complex facility are significant. With respect to the international scientific community and the operating costs, not scheduled shutdown times have to be as short as possible.

A significant part of the accelerator complex will be (highly) activated. The safety of the maintenance personnel allows only short time access or remote handling in activated areas.

That means that in general replacement times of components should be minimized.

4.3.2 All components used have to be in batch production and likely to be so for at least the next five years. Commercially available components have to be used wherever possible.

Obsolete or specially selected components shall not be used.

All components and spare parts have to be available at least 10 years. The Contractor has to provide a long term strategy to ensure the availability over required time span.

4.4 Design Report

4.4.1 All technical concepts and designs have to be given in form of a design report to the Company and must be approved by the Company before start of construction.

4.4.2 Any approval of the Company does not impact the responsibility of the Contractor to deliver the components as specified and requested.

4.4.3 The Contractor may at any time suggest modifications to the details as found in the drawings and/or specifications. In each case, the Contractor shall inform the Company and seek for a written approval. The Contractor shall remain responsible for the construction, assembly and delivery in compliance with the specifications.

4.4.4 Any work, modification or change of documentation without approval by the Company is not part of the contract.

5. Quality Assurance

5.1 General Remarks

5.1.1 This chapter defines the general FAIR project quality assurance aspects and test strategy for the accelerator facility project.

5.1.2 The quality plan (Q-Plan) [Annex III] is the basic document to achieve the necessary quality. In the contract the relevant aspects of the Q-Plan might be adjusted.

5.1.3 Further individual and specific aspects and tests are described in the relevant Detailed Specifications, Common Specifications, and Technical Guidelines.

5.1.4 General test specifications and test procedures are described in Chapter 5.3

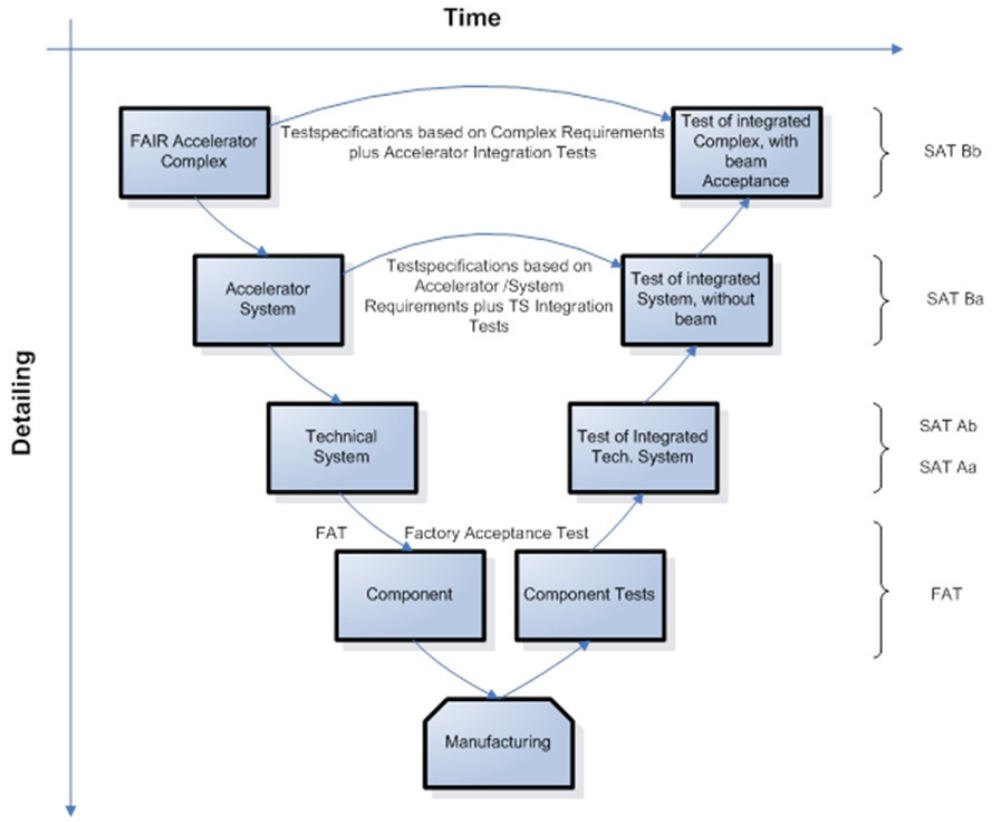

Figure 1: V-Modell for quality assurance and test strategy

5.2 Quality Gates

5.2.1 Defined by the Work Breakdown Structure, the complete accelerator complex is divided into individual accelerator systems. These are made up of various technical systems. The technical systems are built by using a set of components. Quality assurance and test strategy utilises a standard model (c.f. Figure 1).

5.2.2 The next phase in the process can only be started after the acceptance of the previous quality gate[4] by the Company. Quality gates are e.g. the acceptance of the Final Design Review (S002.M7), of the pre-series (S004.M8), of the Factory Acceptance Test (S005.M9), and of the Site Acceptance Tests (S006.M10 and S007.M11). A conditional acceptance is possible.

5.2.3 Tests and quality aspects are defined in the Common Specifications and in the individual Detailed Specifications.

5.2.4 **Factory Acceptance Tests (FAT)** are carried out at the manufacturer's site.

5.2.5 **Site Acceptance Tests (SAT)** at the Company's site are divided into part A and B.

[4] A quality gate is a special milestone in a project which focuses on the achievement of predefined quality goals. Quality gates are located before a phase that is strongly dependent on the outcome of a previous phase.

SAT Part A includes the tests after delivery to the Company, but before the technical system is integrated in its final installation place.

- SAT Aa is the incoming goods inspection
- SAT Ab contains all the other tests to be carried out to get permission for transport to the final installation place

5.2.6 **SAT Part B** comprises all tests to be performed at the final installation place.

- SAT Ba includes all tests without beam
- SAT Bb addresses the tests with beam.

5.2.7 With respect to project milestones and quality gates, the following steps and phases are defined for the FAIR project. If necessary, additional steps will be added in the Detailed Specification of components.

5.2.8 For Schedules the activity codes and sub codes in Table 1 shall be used for each item to be specified. The activity code divides the different tasks in 7 different groups. The sub code assigns a unique activity (A) or milestone (M) to each step.

Activity Code	Sub Code	Description
S002		**Design and planning**
S002	A3	Compile work package description / TDR
S002	M3	Approval of work package description / TDR
S002	A4	Prepare contract
S002	M4	Contract is signed
S002	A5	Prepare manufacturing concept
S002	M5	CD0 = Critical Decision 0
S002	A6	Detailing of the manufacturing concept
S002	M6	CDR accepted
S002	A7	Finalize (manufacturing) documentation
S002	M7	FDR accepted / planning completed
S003		**Production / Procurement**
S003	AX1	Acquire material
S003	MX1	All material is acquired
S004		**Manufacturing of pre-series / prototype**
S004	A8	Manufacturing of pre-series / construction of prototype
S004	A89	Testing of pre-series / prototype
S004	M8	Pre-series accepted / prototype tested
S005		**Manufacturing of series / component**
S005	M81	Series production started
S005	A90	Prepare series production
S005	A91	Execute series production
S005	A99	Execute FAT
S005	M9	FAT accepted
S006		**Shipment to FAIR**
S006	ATS	Shipment to FAIR
S006	A10	Execute SAT Aa
S006	A109	Execute SAT Ab
S006	M10	SAT accepted / approval for installation
S006	M91	Start of Shipment
S006	M92	End of Shipment
S007		**Installation in tunnel / cave**
S007	A110	Transport into tunnel / to experimental site
S007	A112	Assembly of components
S007	A119	Execute SAT Ba / test without beam

S007	M11	SAT Ba accepted / ready for beam
S007	M102	Assembly in tunnel finished
S008		**Bringing into service / commissioning**
S008	A12	Execute SAT Bb - with beam
S008	M12	SAT Bb accepted / ready for operation

Table 1: Activities (A) and milestones (M) of the FAIR project

5.3 Reviews, Inspections and Measurements

5.3.1 General Remarks

5.3.1.1 Factory Acceptance Test (FAT) will take place at the Contractor's site before shipment, to verify the given specifications of the components.

5.3.1.2 All or some of these tests will be repeated after the component has been delivered (SAT A).

5.3.1.3 The final acceptance document will be signed after the component is mounted and has undergone a test operation at its final position in the accelerator complex (SAT Ba).

5.3.1.4 During the acceptance tests, all specified properties of the components have to be proven and demonstrated. This comprises for example the electrical, mechanical and vacuum properties of the device.

5.3.1.5 Acceptance tests are only valid if they are documented in proper form as agreed in the review meetings, and are accepted by the Company.

5.3.1.6 The Contractor shall be responsible for providing all necessary measurement tools/equipment and devices.

5.3.1.7 Testing of prototype or first of series is defined in the Common Specifications and/or the Detailed Specifications.

5.3.1.8 Testing of serially produced components is defined in the Common Specifications and/or the Detailed Specifications.

5.3.2 Quality Assurance at Contractor's Site

5.3.2.1 Standards in the style of ISO9001 have to be respected. That requires that all modules to be produced are supported by an approved and formal process designed to monitor and record each phase of the design, manufacturing and testing.

The Contractor will hand over to the Company an adequate set of process descriptions and documents which show the adherence of the Contractor's QM system to the ISO9001 (or an equivalent or higher standard).

5.3.2.2 A test plan has to be established by the Contractor. Changes to the test plan have to be communicated to the Company and must be agreed by the Company. The test plan describes especially the required FAT tests.

5.3.2.3 The Contractor defines and executes individual sub-assembly inspection and test procedures at each stage. They must be designed to allow basic faults to be rapidly located, identified, and their causes eliminated by the Contractor.

5.3.2.4 The Contractor has to prepare a test protocol of each reached and executed acceptance test.

5.3.3 Tests and Reviews at the Contractor's Site

5.3.3.1 The Contractor shall carry out all specified intermediate acceptance tests and other investigations. The Contractor shall record in protocols the results of the intermediate acceptance tests and other investigations, and shall immediately inform the Company of those.

5.3.3.2 After the completion of a component, a test of all measurable figures and their compliance with the specified tolerances shall be carried out on the Contractor's Site.

5.3.3.3 After receiving notification of readiness for tests, the Company will decide on a case-by-case basis whether the test shall be carried out in the presence of representatives of the Company or whether the issuance of a test certificate is sufficient.

5.3.3.4 If the results of the test show that additional work is necessary, compliance with the specified tolerances shall be proven once again in cooperation with the Company.

5.3.3.5 The acceptance tests at the Contractor's Site (FAT) have to be conducted in attendance of a representative of the Company.

5.3.4 Tests and Reviews at the Company's Site

5.3.4.1 A set of tests and quality assurance activities will be executed by the Contractor on his own cost at the Company's site (SAT A).

5.3.4.2 Samples of the delivered goods will be functionally tested by using test environments of the Contractor (SAT A).

5.3.4.3 Test material and test equipment for the SAT Aa and SAT Ab tests have to be delivered by the Contractor together with the components.

5.3.4.4 A set of Site Acceptance Tests (SAT Aa) will be done after delivery to the Company to ensure the integrity of the component.

5.3.4.5 Tests for SAT Ab acceptance can only begin after successful completion of these Site Acceptance Tests (SAT Aa).

5.3.4.6 Either all tests of the FATs or a random sample of the FATs will be repeated at the Company's site. After the successful test SAT Ab the component shall be approved for installation.

5.3.4.7 Tools/equipment and facilities for the tests shall be kept for three years after the final acceptance of all components free of charge and such that they are protected from corrosion, theft, and distraint. Subsequently, they shall be delivered to the Company or shall continue to be stored for a fee. The Contractor shall invoice the storage expenses to the Company along with the main quotation.

5.3.4.8 The Company shall be informed about the Contractor's planned measures three months before the three-year period expires.

5.3.5 High precision geometric measurement services – Fiducialisation

5.3.5.1 All fiducialisation measurements will be performed at GSI.

5.3.5.2 All survey and alignment activities including fiducialisation measurements will be performed by external measurement specialists, authorised and supervised by GSI.

5.3.5.3 Information about which components have to be surveyed has to be taken from the respective Detailed Specifications.

5.3.5.4 A Contractor, whose components have to be fiducialised, surveyed and aligned at their final place in the tunnel, is responsible for the transport to the measuring site for fiducialisation and afterwards into the tunnel (assembly crew of contractor).

5.3.5.5 The Contractor has to adhere to the time limits scheduled for the dedicated components.

5.3.5.6 The Contractor has to transport the component to its place of final destination and has to pre-align it roughly with respect to existing floor markings (accuracy 1-5mm).

5.3.5.7 The Contractor agrees to support the measurement specialists in the alignment works.

5.3.6 Site Acceptance Tests

5.3.6.1 The final acceptance test shall be carried out after delivery to the designated location. The results of the previous tests can be taken into consideration. A final acceptance test protocol shall be drawn up. After the successful SAT B test the component is handed over for operation.

5.4 Quality Assurance Reporting

5.4.1 At the latest upon delivery, the Contractor shall provide all design documents in “as-built” quality, all material certificates, all test and measurement protocols and all documentation regarding the production/assembly process.

5.4.2 Drawings shall be submitted which document the current status of the component. At the same time all information shall be provided which includes special procedures such as cleaning requirements, special handling requirements or assembly instructions.

5.4.3 The Contractor shall send written quality assurance reports as defined in the Q-Plan. An annex shall include all records related to tests and agreements that have taken place.

5.4.4 The Company shall be informed in writing (e-mail) in due time of any events during construction/assembly which may cause a delay in construction/assembly and delivery.

5.5 Manufacturing Faults

5.5.1 In case of manufacturing faults, modifications, repairs or replacements have to be carried out on all components affected at the Contractor’s expense.

6. Documentation

6.1 The standard language of all documents is English.

6.2 If the Contractor has to write technical specifications, the use of the specification template provided by the Company is obligatory

6.3 During production, the Contractor shall assemble production/assembly documentation with photos of the most important devices and processes. The Contractor shall submit comprehensive operating instructions, risk analyses and trouble-shooting documentation for all components and systems.

The following are examples of documentation:

- User manual
- Maintenance manual
- Test protocols
- Protocol set of the Factory acceptance tests (FAT)
- Protocol set of the Site acceptance tests (SAT)
- Instruction protocols
- Drawings, 3D models
- Proof of compliance with regulations and directives
- Material inspection certificate 3.1 acc. DIN EN 10204:2005-01
- Bill of materials
- Lists of spare parts
- Electronic layouts, schematics
- Strength analysis for welded joints
- Acceptance certificate for welded products
- Acceptance certificates from governmental authorities
- TÜV or LGA expert opinions
- Handling requirements for assembly/mounting and lifting equipment

6.4 The requirements of the standard IEC 82079:2012 (former IEC 62079:2001) shall be complied with in drawing up the technical documentation and its contents. The technical documentation shall be divided into logical sections and shall have a clear structure.

6.5 A change log is generally used so that different versions of a file can be traced. The ISO 6789:2003 is one standard that provides an overview of the compilation of documentation.

6.6 The documentation of the mechanical design must comply with the requirements of the Design Guideline [3] .

6.7 At latest upon delivery the documentation must be completely given to the Company in

- electronic form
  - non-changeable format
  - changeable format
- and one paper copy

6.8 The documentation, especially the sets of drawings to be delivered on digital media, must comply with the requirements of the data exchange standards [10], [11].

7. Shipping / Transportation

7.1 The Contractor shall be responsible for all necessary shipping and/ or transportation of

- Equipment,
- Assembly devices,
- Production or FAT/SAT required items provided by the Company and units to operate the equipment for the measuring tasks according to the Technical Guideline F-TG-T-01e Transport [12].

7.2 The terms of delivery shall be carried out according to the STC of the Company, the Technical Guidelines (e.g. [12], [13], [14]), and the German Packing Ordinance. All delivery shall be covered by DDP, INCOTERMS 2010.

In the case of deviations, they are separately specified in the contract.

7.4 During transport the Contractor carries the responsibility for human safety and for the safety and security of the transported goods.

7.5 The packaging of the shipped components has to be marked on two neighbouring sides with correspondent CIDs.

8. Miscellaneous

8.1 General Remarks

8.1.1 During the execution of the project it might become necessary to adapt the technical parameters. If this does not influence the content of the delivery or service the Company is allowed to do this with just information of the Contractor.

8.1.2 The Contractor agrees to inform the Company in due time about any circumstances, which may be a reason to change parameter of the component or which may change the approved “Detailed Time Schedule” in the contract.

8.1.3 Any changes have to be agreed on by the Company according to the change management procedures.

8.2 Provisions of the Company

8.2.1 The Company will develop in due time the personal safety organization on the construction side including writing and communication of the corresponding safety instructions.

8.2.2 The Company will provide the supply of cooling water, technical gases, pressurized air, electrical power and environmental conditions (light, air, temperature) according to the requirements specified for the operation phase (cf. Detailed Specifications).

Any additional requirements needed by the Contractor for the assembly or construction phase are in principle not available.

The Contractor may in this case contact the Company in order to elaborate separate agreements for local support.

8.2.3 Every FAIR component has to be labelled with a unique number, called component ID (CID) [15]. The CID will be assigned by the Company.

8.2.4 A nomenclature system is established by the Company to uniquely identify all accelerator systems and sub-systems [16]. The Contractor has to follow the naming convention established by the Company

8.3 Requirements on Personnel

8.3.1 All components supplied for a system have to be manufactured by trained and qualified people.

8.3.2 If measurement at the Company's site has been agreed upon, qualified personnel shall be provided and shall receive instruction from the Company.

9. Annexes

I. Legal Safety Regulations

The information guide Manufacturing and operation of equipment designed for research purposes (BGI/GUV-I 5139 E)[5] aims to provide guidance to meet the legal requirements (CE conformity and workspace safety)[6] [7]

- Gesetz über die Bereitstellung von Produkten auf dem Markt (Produktsicherheitsgesetz ProdSG) – German act on product safety based on the Directive 2001/95/EC on general product safety
- 1. Verordnung zum Produktsicherheitsgesetz (1. ProdSV) – German ordinance based on the Directive 2006/95/EC on the harmonisation of the laws of the Member States relating to electrical equipment designed for use within certain voltage limits [Low Voltage Directive (LVD)]
- 6. Verordnung zum Produktsicherheitsgesetz (6. ProdSV) – German ordinance based on Directive 2009/105/EC on simple pressure vessel [Simple Pressure Vessels Directive (SPVD)]
- 9. Verordnung zum Produktsicherheitsgesetz (9. ProdSV) – German ordinance based on Directives 89/392/EEC on the approximation of the laws of the Members States relating to machinery and 2006/42/EC on machinery and the amending directive 95/16/EC (recast) [Machinery Directive]
- 11. Verordnung zum Produktsicherheitsgesetz (11. ProdSV) – German ordinance based on Directive 94/9/EC on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres [ATEX Directive]

[5] Information guide is available online: http://publikationen.dguv.de/dguv/pdf/10002/i-5139e.pdf
[6] German laws are available online: http://bundesrecht.juris.de
[7] European Directives are available online: http://eur-lex.europa.eu/RECH_naturel.do

- 14. Verordnung zum Produktsicherheitsgesetz (14. ProdSV) – German ordinance based on Directive 97/23/EC on the approximation of the laws of the Member States concerning pressure equipment [Pressure Equipment Directive (PED)]
- Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln (EMVG) – German act based on Directive 2004/108/EC on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC [EMC Directive]
- Strahlenschutzverordnung (StrlSchV) – German radiation protection ordinance based on Directives 96/29/EURATOM, 97/43/EURATOM, and 89/618/EURATOM
- Röntgenverordnung (RöV) – German X-ray protection ordinance based on the Directives 96/29/EURATOM and 97/43/EURATOM
- Arbeitsschutzgesetz (ArbSchG) – German act on the introduction of measures to encourage improvements in the safety and health of workers at work based on the Directives 89/391/EEC and 91/383/EEC
- Betriebssicherheitsverordnung (BtrSichV) – German ordinance based on Directives 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work and 2009/104/EC concerning the minimum safety and health requirements for the use of work equipment by workers at work
- Arbeitsstättenverordnung (ArbStättV) – German ordinance based on Directives 89/654/EEC concerning the minimum safety and health requirements for the workplace and 92/58/EEC of 24 June 1992 on the minimum requirements for the provision of safety and/or health signs at work

II. Regulations of German Statutory Accident Insurance

In particular but not exclusive following documents have to be considered

- BGV A1 Grundsätze der Prävention (Principles of Prevention)
- BGV A3 Elektrische Anlagen und Betriebsmittel (Electrical systems and equipment)
- BGV D6 Krane (Cranes)
- BGV D8 Winden, Hub- und Zuggeräte (Jacks, Lifting and Pulling Equipment)
- BGI 545 Gabelstapler (Forklifter)

A complete set of regulations and information on safety and health of workers at work can be found in

http://www.arbeitssicherheit.de/de/html/library/overview (in German)

III. Quality Plan

1. The Contractor shall prepare a comprehensive Quality Plan (Q-Plan) based on ISO 9001 for its deliveries and submit it to the Company for approval. The Q-Plan shall cover the contents given hereafter as a guideline:

1.1. Scope and goals of the Quality Plan

a. Reference to input documents
b. Quality objectives (Specification of quality levels of deliverables)

1.2. Responsibilities

a. Definition and distribution of responsibilities
b. Project management structure

1.3. Specification and drawings

a. Review of contractual specifications
b. Requirements for production drawings

1.4. Resource Management

a. Personnel
b. Infrastructure
c. Machines and equipment

1.5. Communication with Company

a. Progress reports
b. Meetings
c. Project reviews

1.6 Production and Realization

a. Purchase and procurement process
b. Control of subcontractors
c. Manufacturing process maps
d. Identification and traceability
e. Tools, techniques, equipment and methods

1.7. Monitoring and Measurements

a. List and description of quality control steps
b. List of characteristics to be measured with tolerance range
c. Validation and verification tests
d. Process and criteria for final acceptance
e. Control of measurement tools

1.8. Preservation of Products

a. Handling and storage specifications
b. Packaging and transport specifications

1.9. Control of Document, Data and Records

a. List of documents and records
b. Approval procedure
c. Schedule of transmission to the Company
d. Ways of preservation of records

1.10. Control of Non-Conformity of Products

a. Immediate actions on defective products or product not suitable for its final functionality
b. Corrective actions to eliminate the cause of the problem
c. Preventive actions

1.11. Professional Quality and Certification of Personnel

1.12. Assistance: Technical Support to the Company

1.13. Quality Audits

2. The Contractor shall ensure the complete and correct execution of all measures specified in the Quality Plan.

3. The Contractor shall inform the Company in due time of the detection of a non-conformance by issuing a non-conformance report sent to the Technical Coordinator of the Company.

IV. Abbreviations

A	Activity
ACA	Accelerator Construction Agreement
ACC	Accelerator
ACC AAB OB	All Accelerator Board – Operating Board
ArbSchG	Arbeitsschutzgesetz, German act on safety and health of workers at work
ArbStättV	Arbeitsstättenverordnung, German ordinance on safety and health of workers at work
ATEX	Atmosphères Explosives (explosive atmospheres)
AutoCAD®	2D/3D CAD software developed by Autodesk
BGI	Berufsgenossenschaftliche Informationen, information on measures for safety and health of workers at work
BGV	Berufsgenossenschaftliche Vorschriften, German regulations on measures for safety and health of workers at work
BtrSichV	Betriebssicherheitsverordnung, German ordinance on safety and health of workers at work
CATIA®	3D CAD software developed by Dassault Systems
CC	Collaboration Contract
CD 0	Critical Decision 0
CDR	Conceptual Design Review
CE	Conformité Européenne (European conformity)
CERN	Conseil Européen pour la Recherche Nucléaire (European Organization for Nuclear Research)
CF-Flange	Conflat Flange
CID	Component-ID
CR	Collector Ring
CS	Common Specification
DARL	Datenaustauschrichtlinie (Data Exchange Guideline)
DDP	Delivered Duty Paid
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DS	Detailed Specification
EC	European Commission
EDMS	CERN Engineering Data Management System
EEC	European Economic Community

EMC	Electromagnetic Compatibility
EMVG	Gesetz über die elektromagnetische Verträglichkeit von Betriebsmitteln, German act on EMC
EN	European standard
EU	European Union
EURATOM	European Atomic Energy Community
FAIR	Facility for Antiproton and Ion Research
FAT	Factory Acceptance Test
FBTR	FAIR Baseline Technical Report
FDR	Final Design Report
GS	General Specification
GSI	GSI Helmholtzzentrum für Schwerionenforschung GmbH (GSI Helmholtz Centre for Heavy Ion Research GmbH)
GUV	Gesetzliche Unfallversicherung, German Statutory Accident Insurance
HEBT	High Energy Beam Transport System
HESR	High Energy Storage Ring
IEC	International Electrotechnical Commission
IKC	In-kind Contribution
INCOTERMS	International Commercial Terms
ISO	International Organisation for Standardization
KRL	Konstruktionsrichtlinie (Design Guideline)
LGA	Landesgewerbeanstalt Bayern, German certification company
LVD	Low Voltage Directive
M	Milestone
p-Bar	Antiproton Target and Separator
PED	Pressure Equipment Directive
PLC	Programmable Logic Controller
PR	Product Readiness
ProdSG	Produktsicherheitsgesetz, German act on product safety
ProdSV	Verodnung zum Produktsicherheitsgesetz, German ordinance on product safety
PSM	Pre Series Module
PSP	Project Structure Plan (code numbers in the cost book)
PSS	Personal Safety System
QA	Quality Assurance
QM	Quality Management
Q-Plan	Quality Plan
RF	Radio Frequency
RöV	Röntgenverordnung, German X-ray protection ordinance
SAT	Site Acceptance Test
SIS 100/300	Schwerionensynchrotron 100/300, heavy ion synchrotron with maximum magnetic rigidity 100/300 Tm
SPVD	Simple Pressure Vessels Directive
STC	Standard terms and conditions of purchase
StrSchV	Strahlenschutzverordnung, German radiation protection ordinance
TDR	Technical Design Report

TG	Technical Guideline
TS	Technical System
TÜV	Technischer Überwachungs-Verein, German technical inspection association
VDE	Verband der Elektrotechnik, Elektronik und Informationstechnik (Association for Electrical, Electronic and Information Technologies)
VDI	Verein Deutscher Ingenieure (Association of German Engineers)

V Literature

[1] F-TG-S-5.2e, "Coloring magnets".
[2] F-TG-B-01e, "Material Selection Radiation".
[3] F-TG-B-04e, "Design Guideline (KRL)".
[4] F-TG-ET-01e, "Electrical Design Rules and Regulations".
[5] F-TG-C-01e, "Ethernet Network Connectivity".
[6] F-TG-C-02e, "Equipment Control Interfaces".
[7] F-TG-C-03e, "Equipment Interlock and Status Signal Interface".
[8] F-TG-C-04e, "Equipment Functional Requirements".
[9] F-CS-C-01e, "Common Specification for the FAIR Accelerator Control System".
[10] F-TG-B-02e, "Data Exchange Guideline I (DARL T1)".
[11] F-TG-B-03e, "Data Exchange Guideline II (DARL T2)".
[12] F-TG-T-01e, "Transport - Transport".
[13] F-TG-T-02e, "Transport - Existing Infrastructure".
[14] F-TG-T-03e, "Transport - Installation".
[15] F-TG-B-0.5e, "Component-Identification and Barcode".
[16] V. R. Schaa, F. Peldzinski, M. Kühne and Bayer, Wolfgang, "System for Nomenclatures of Accelerator Devices at FAIR & GSI," [Online]. Available: https://www-acc.gsi.de/wiki/Accnomen.

This Technical Guideline is valid for all transports from the manufacturer to the construction site of the Company

1. All transports of components to be delivered by the Contractor to the Company have to be free of charge for the Company . All transport costs, including taxes, customs clearance, shipping (air,land,sea) have to be fully covered by the Contractor.

2. Transport, delivery and unloading has to be organized by the Contractor in close cooperation with the Company. The Copmpany will not be liable for additional costs (e.g. time delay, missing tools or missing infrastructure,...) resulting from transports not approved in advance by the Company.

3. The Contractor takes responsibility for any damage caused by inappropriate packaging and transportation. Damaged goods will be rejected by the Company. In the case that a damage of goods is observed , the Company will immediately inform the supplier of the observed damage. The Contractor will decide if a repair on site (Company) will be carried out or if the damaged good will be shipped back to the Contractor or manufacturer.
The Contractor has to cover the full costs of repair, shipping, second delivery.

4. All packaging (e.g. pallets, boxes, support structures etc.) shall be provided by the Contractor free of charge. After installation of the component delivered, the removal of the packaging material has to be organized by the Contractor.
The Contractor has to cover the full costs of the removal .

5. Standard transports to the Company

5.1 The dimensions of trucks and trailers used for the delivery of components to the Company have to be in accordance with EU and german standards:
references:
http://bundesrecht.juris.de/stvzo/__32.html
http://bundesrecht.juris.de/stvzo/__34.html

Maximum dimensions of trucks and trailers:
overall length: 18.75m
maximum width: 2.55m
maximum height: 4.0m
maximum overall weight: 40.0t

5.2 Traffic ways, unloading bays, access to unloading areas / buildings at Company site are designed for Vehicles which are in accordance to 5.1

5.3 Delivery of components by vehicles which are not in accordance to 5.1 has to be planned in close collaboration with the Company:

5.3.1 The Contractor is responsible for the complete organization and logistics of non-standard transports

5.3.2 The Contractor has to cover all costs of the non-standard transport

5.3.3 The Contractor is responsible for the planning, construction, reconstruction of all modifications to traffic ways, accesses, and buildings at the Company site which are necessary due to the non-standard transport,

5.3.4 The Contraktor has to cover the complete costs of 5.3.3.,

5.3.5 If unloading of non standard transports at the Company site is not possible by the existing infrastructure of the Company, the Contractor is responsible for the complete organization, logistics and implementation (e.g. additional mobile crane, Fork lifter, special tools),

5.3.6 The Contractor has to cover the complete costs of 5.3.5,

5.3.7 The transport organization plan has to be prepared by the Contractor and to be approved by the Company.

5.4 Deliveries of components or goods within the scope of 5.3 which are not officially approved by the Company in advance (before the start of the transport) will not be accepted by the Company and will be rejected at the full expenses of the Contractor.

6. NON Standard transports to the Company (Large / Heavy Items)
For all components or items which have dimensions or weights exceeding dimensions and weights described in 5. the following regulations are valid:

6.1 The Contractor has to ensure that the component delivered can be transported and installed at the Companies construction site. To ensure the compatibility of a large or heavy component with the Company infrastructure, buildings, ways of transport, a detailed planning in close collaboration with the Company is mandatory. Depending on the special design of the component, it might be necessary to start this planning already in the design and construction phase.

6.2 For each component which cannot be handled on pallets, a detailed planning for the transport to the Company, unloading at the construction site, transport at the construction site and installation has to be performed.
This includes a complete collision check (ways of transport, building constraints, conflicts with other installations) performed by the Company. The approval after this collision by the Company is one precondition for each delivery or transport to the construction site or at the construction site.

6.3 Unloading and transport to a storage yard of the Company (unfavored strategy):

6.3.1 The Contractor has to announce the delivery of a large and heavy component to the Company at latest 20 working days in advance.
This application has to contain the full technical documentation, including:

6.3.1.1 geometrical size / dimensions, weight

6.3.1.2 handling instructions

6.3.1.3 unloading instructions

6.3.1.4	statement if support (infrastructure, manpower) by the Company is demanded
6.3.1.5	in case of 6.3.1.4. "YES": list of tools, infrastructure, manpower request (costs have to be covered by Contractor),
6.3.1.6	time schedule / project plan,
6.3.1.7	tools which will be delivered for unloading and handling together with the component,
6.3.2	The Company will confirm or refuse the application and provide the following informations:
6.3.2.1	place for unloading (hall, construction side, ...)
6.3.2.2	date of delivery
6.3.2.3	place for storage (if needed or requested)
6.3.2.4	Company infrastructure which can be provided (tools, manpower)
6.3.2.5	special unloading and handling tools which have to remain at the Company together with the delivered component
6.3.2.6	quotation for the costs to be covered by the Contractor: storage costs (warehouse charges), tools, manpower
6.4	Transport to the final installation location at the Company (favored strategy) :
6.4.1	The Contractor has to announce the transport from the unloading area or storage yard to the installation location at latest 30 working days latest prior to transport, including:
6.4.1.1	statement if support (infrastructure, manpower) by the Company is demanded
6.4.1.2	in case of 6.4.1.1. "YES": list of tools, infrastructure, manpower request (costs have to be covered by Contractor)
6.4.1.3	time schedule / project plan
6.4.2	The Company will confirm or refuse the application and provide the following information :
6.4.2.1	location of unloading or storage yard (building, construction side, ...)
6.4.2.2	date of transport to final installation location
6.4.2.3	way of transport to the installation location (building)
6.4.2.4	The Company infrastructure which can be provided (tools, manpower)
6.4.2.5	quotation for the costs to be covered by the Contractor: storage costs (warehouse charges), tools, manpower

7. Standard delivery of components by the supplier to FAIR shall be done on pallets (lift slabs)

7.1

7.1.1 Size according to German and EU standards:

EUR-Pallet:	size:	800 x 1200mm
	Load bearing capacity:	1500kg
	Technical standards:	UIC-data sheet 435-2
Industrial Pallet: (EUR2 / EUR3)	size:	1000 x 1200mm
	Load bearing capacity:	1500kg
	Technical standards:	UIC-data sheet 435-5

7.1.2 wooden packaging /pallets have to be according to ISPM15 (International Standards for Phytosanitary measures)

7.2 Boxes, containers (wooden, cardboard, …)

7.2.1 Boxes have to be fixed to Pallets according to 7.1

7.2.2 size: maximum base size according pallet size 7.1
maximum height (including pallet): 2000mm
maximum weight (including pallet): 1500kg

7.2.3 wooden boxes have to be closed by cross-head screws (Philips screws) or Torxx screws to allow repeatedly access to the packed items

7.2.4 wooden packaging has to be according to ISPM15 (International Standards for Phytosanitary measures)

7.3 The delivery of components exceeding dimensions and weights according to 7.1 or 7.3 has to be approved in advance by the Company and a detailed transport planning has to be performed.

7.4 Weather protection: All components packed on pallets or in boxes have to be protected against rain and humidity. Components transported oversea (e.g. inside oversea container) have to be protected against any damage by seawater.

7.5 Damage protection: all components packed on pallets or in boxes have to be protected against mechanical damage. Especially delicate instruments, components, or parts of components (e.g. accelerator insertions, UHV parts: CF knife edges, ceramic parts, fragile feedthroughs,...) have to be additionally protected by appropriate shock absorbing materials.

7.6 Waste disposal of package material:

The Contractor is responsible for the waste disposal of the packaging material of the items delivered (after the installation of the component or item). The Contractor has to remove the package material after component / item installation and is obligated to dispose the waste according to German and EU law. If the Company takes over the waste disposal for package material, the Contractor has to cover the cost proportional to the amount of package material waste resulting from the delivered items.

8 Documentation and Labelling

8.1 Documentation:
Each item, set of items or single component (on pallet, in box, loose) has to be delivered together with:

8.1.1 complete delivery notes,

8.1.2 bill of material / parts list (if a number of items / components are packed together in one box or on one pallet),

8.1.3 Any component with documents missing will be rejected to the Contractors expense.

8.2 Labelling:

Each item, set of items or single component (on Pallet, in box, loose) has to be labeled as follows:

8.2.1 name of each single item according to the Companies nomenclature,

8.2.2 Name and address of the Contractor including named person to be contacted by the Company in case of observed damage of packed items / components,

8.2.3 weight and size of each single item

8.2.4 weight and size of package, box, pallet,

8.2.5 if special handling is required: safety note, hazard warning, handling note, marking with tilt-watch, shock-watch, "this-side-up", etc,

8.2.6 labelling with barcode system defined by the Company: code information should contain at least: 8.2.1, 8.2.2, 8.2.3

8.2.7 labelling has to withstand humidity, moderate rain and direct sunlight

8.3 Location of labelling:

Each item, set of items or single component (on pallet, in box, loose) has to be labeled according 8.2 and GS7.5.

9 **Questionnaire**

9.1 Background
The attached questionnaire: **Q-F0-T-0001 Checkliste Anlieferung v1_0** collects all necessary information in respect to transport (articles 1.8) to be filled out by the Contractor and informations concerning possible additional testing and handling (to be filled out by the responsible work packager leader (WPL))

This unofficial version reflects the Packaging Ordinance as at 1 April 2009, date at which the Fifth Amending Ordinance entered into force in its entirety

Packaging Ordinance[1]

The Federal Government, acting pursuant to section 6 subsection (1), fourth sentence, section 23 Nos. 1, 2 and 6, section 24 subsection (1) Nos. 2, 3 and 4 and subsection (2) No. 1 and section 57, each in conjunction with section 59, and section 7 subsection (1) No. 3 and section 12 subsection (1) of the Closed Substance Cycle and Waste Management Act (*Kreislaufwirtschafts- und Abfallgesetz*) of 27 September 1994 (Federal Law Gazette I p. 2705), having heard the parties concerned and having regard to the rights of the Bundestag, hereby decrees as follows:

Part I

Waste Management Objectives, Scope and Definition of Terms

Section 1

Waste Management Objectives

(1) The purpose of this Ordinance is to avoid or reduce the environmental impacts of waste arising from packaging. Packaging waste shall in the first instance be avoided; reuse of packaging, recycling and other forms of recovery shall otherwise take priority over the disposal of packaging waste. To achieve this purpose, this Ordinance shall regulate the market behaviour of all parties obligated under this Ordinance in such a way as to attain the waste management goals and at the same time protect economic operators from unfair competition.

[1] Ordinance on the Avoidance and Recovery of Packaging Wastes (Packaging Ordinance - *Verpackungsverordnung - VerpackV*) of 21 August 1998 (Federal Law Gazette I p. 2379) as last amended by the Fifth Amending Ordinance of 2 April 2008 (Federal Law Gazette I p. 531)

(2) This Ordinance aims to increase to at least 80 per cent the share of beverages filled into reusable drinks packaging and ecologically advantageous one-way drinks packaging. The Federal Government shall conduct the necessary surveys on the respective shares and shall publish the results annually in the Federal Gazette. The Federal Government shall assess the impact on waste management of the provisions contained in section 9 by no later than 1 January 2010. The Federal Government shall report its findings to both the *Bundestag* and the *Bundesrat*.

(3) No later than 31 December 2008, the annual share of all packaging waste being recovered shall be at least 65 percent by weight and the share being recycled shall be at least 55 percent by weight. The recycling targets for the different materials contained in packaging shall be 15 percent by weight for wood, 22.5 for plastics, counting exclusively material that is recycled back into plastics, 50 for metals and 60 for glass, paper and cardboard. The Federal Government shall conduct the necessary surveys and inform the general public and the economic operators. Packaging waste exported out of the Community in accordance with Regulation (EC) No. 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste (OJ EC No. L 190 p.1), Regulation (EC) No. 1420/1999 of the Council and Regulation (EC) No. 1547/1999 of the Commission shall only count for the achievement of the obligations and targets of the first and second sentences above if there is sound evidence that the recovery or recycling operation took place under conditions that are broadly equivalent to those prescribed by the Community legislation on the matter.

Section 2
Scope of Application

(1) The Ordinance shall apply to all packaging put into circulation within the territorial scope of the Closed Substance Cycle and Waste Management Act *(Kreislaufwirtschafts- und Abfallgesetz)*, regardless of whether it arises in industry, trade, administration, business, the service sector, households or elsewhere, and regardless of the materials of which it consists.

(2) This shall be without prejudice to any special requirements that may exist with regard to packaging or the management of packaging waste or the carriage of packaged products or of packaging waste.

(3) The powers of the Federal, *Land* and local authorities to require third parties to avoid and recover waste in the use of their facilities or land and in the special use of public roads shall not be affected.

Section 3
Definition of Terms

(1) Within the meaning of this Ordinance the following definitions shall apply:

1. Packaging:
   Products manufactured from materials of any nature for the containment, protection, handling, delivery or presentation of goods, which may range from raw materials to processed products and are passed on by the manufacturer to the distributor or final consumer. The definition of “packaging” shall be further based on the criteria set out in Annex V. The items also listed in Annex V are illustrative examples of the application of these criteria.

2. Sales packaging:
   Packaging that is made available as a sales unit and arises at the final consumer. Sales packaging within the meaning of the Ordinance shall also include such packaging provided by retailers, restaurants and other service providers as facilitates or supports the transfer of goods to the final consumer (service packaging) and disposable dishes.

3. Secondary packaging:
   Packaging that is used as packaging additional to sales packaging and is not necessary for transfer to the final consumer for reasons of hygiene, durability or the protection of goods from damage or contamination.

4. Transport packaging:
   Packaging that facilitates the transport of goods, protects the goods from damage during transport or is used in the interest of transport safety and arises at the distributor.

(2) Drinks packaging within the meaning of this Ordinance is closed or mainly closed packaging for liquid foodstuffs within the meaning of section 2 subsection (2) of the Food and

Feed Code *(Lebensmittel- und Futtermittelgesetzbuch)* intended for consumption as drinks, with the exception of yoghurt and kefir.

(3) Reusable packaging within the meaning of this Ordinance is packaging that is intended to be reused several times for the same purpose. One-way packaging within the meaning of this Ordinance is packaging that is not reusable packaging.

(4) Ecologically advantageous one-way drinks packaging within the meaning of this Ordinance is:

- Drinks carton packaging (brick packs, gable-top cartons, cylindrical packaging),
- Drinks packaging in the form of polyethylene bags,
- Stand-up bags.

(5) Composite packaging within the meaning of this Ordinance is packaging made of different materials which cannot be separated manually and none of which exceeds a share of 95 percent by weight.

(6) Emptied packaging within the meaning of this Ordinance is packaging of which the contents have been exhausted in the designated manner.

(7) Pollutant-containing products within the meaning of this Ordinance are

1. substances and preparations which if sold in the retail trade would be subject to the ban on self-service pursuant to section 4 subsection (1) of the Chemicals Prohibition Ordinance *(Chemikalienverbotsverordnung)*;
2. plant protection products within the meaning of section 2 No. 9 of the Plant Protection Act *(Pflanzenschutzgesetz)* which under the Hazardous Substances Ordinance *(Gefahrstoffverordnung)* are labelled
   a) as very toxic, toxic, oxidising or highly flammable or
   b) as harmful to health and labelled with R-phrases R 40, R 62, R 63 or R 68,
3. preparations of diphenylmethane-4,4’-diisocyanate (MDI), insofar as such preparations are to be labelled as harmful to health and with R-phrase R 42 pursuant to the Hazardous Substances Ordinance *(Gefahrstoffverordnung)* and are put into circulation in pressurised gas packaging.

(8) Manufacturer within the meaning of this Ordinance is anyone who manufactures packaging, packaging materials or products from which packaging is directly manufactured, and anyone who imports packaging into the territorial scope of this Ordinance.

(9) Distributor within the meaning of this Ordinance is anyone who puts into circulation packaging, packaging materials or products from which packaging can be directly manufactured, or goods in packaging, at whatever level of trade. Distributor within the meaning of this Ordinance also includes the mail-order trade.

(10) The catchment area of the manufacturer or distributor shall be taken to be the territory of the state in which the goods in packaging are put into circulation.

(11) Final consumer within the meaning of this Ordinance is anyone who does not further resell the goods in the form delivered to him. Private final consumers within the meaning of this Ordinance are households and comparable places where packaging arises, especially restaurants, hotels, canteens, administrations, barracks, hospitals, educational establishments, charitable institutions, premises used by members of the liberal professions and typical places in the cultural sector where packaging arises, such as cinemas, opera houses and museums, as well as typical places in the leisure sector where packaging arises, such as holiday complexes, leisure parks, sports stadiums and service areas. Comparable places within the meaning of the second sentence above include farms and craft trade businesses from which the removal of waste can take place via standard household collection containers for paper, cardboard and light packaging by means of not more than one 1100-litre emptiable container per substance group at the usual household collection intervals.

Part II
Obligation to Accept Returned Packaging, Charge Deposits and Recover Packaging

Section 4
Obligation to Accept Returned Transport Packaging

(1) Manufacturers and distributors shall be obligated to accept returned transport packaging after use. In the context of repeated deliveries, such acceptance may take place at one of the next deliveries.

(2) The returned transport packaging shall be reused or recycled insofar as this is technically possible and economically reasonable (section 5 subsection (4) of the Closed Substance Cycle and Waste Management Act (*Kreislaufwirtschafts- und Abfallgesetz*)), and especially where a market for a recovered substance exists or can be created. In the case of transport packaging manufactured directly from renewable raw materials, energy recovery shall be deemed equivalent to recycling.

Section 5
Obligation to Accept Returned Secondary Packaging

(1) Distributors providing goods in secondary packaging shall be obligated to remove such secondary packaging upon delivery of the goods to the final consumer or to give the final consumer the opportunity to remove and return the secondary packaging free of charge at the point of sale or on the premises of the point of sale. This shall not apply if the final consumer desires the goods to be handed over in the secondary packaging; in this case the provisions concerning acceptance of returned sales packaging shall apply *mutatis mutandis*.

(2) If the distributor does not remove the secondary packaging himself, he shall be obligated to indicate, by means of clearly recognisable and legible signs at the cash desk, that the final consumer has the opportunity, either at the point of sale or on the premises of the point of sale, to remove the secondary packaging from the acquired goods and to leave it there.

(3) The distributor shall be obligated to provide at the point of sale or on the premises of the point of sale suitable collection containers to accommodate the secondary packaging which are clearly visible and easily accessible to the final consumer. Individual material groups shall be collected separately insofar as this is possible without labelling. The distributor shall be obligated to consign secondary packaging to reuse or recycling. Section 4 subsection (2) shall apply *mutatis mutandis*.

Section 6

Obligation to Ensure the Collection of Sales Packaging Arising at the Private Consumer on a Full-Coverage Basis

(1) Manufacturers and distributors who put sales packaging filled with product and typically arising at the private final consumer into circulation for the first time, shall take part in one or several compliance schemes pursuant to subsection (3) below to ensure the collection of such sales packaging on a full-coverage basis. Notwithstanding the first sentence above, distributors who put service packaging within the meaning of section 3 subsection (1) No. 2, second sentence, filled with product and typically arising at the private final consumer into circulation for the first time, shall be permitted to require that the manufacturers or distributors or upstream distributors of such service packaging take part in one or several compliance schemes pursuant to subsection (3) below with regard to the service packaging they provide. Sales packaging pursuant to the first sentence above may only be transferred to private final consumers if the manufacturers and distributors take part in a compliance scheme pursuant to subsection (3) below with regard to such packaging. For the purpose of ensuring equal terms of competition for all parties obligated under the first sentence above and of receiving reimbursement of their expenses, compliance schemes pursuant to subsection (3) below may also charge those manufacturers and distributors who do not take part in any compliance scheme for the cost of collecting, sorting, recovering or disposing of the packaging put into circulation by such persons and recovered by the compliance scheme. Where a distributor can prove that he has taken back, at the place of transfer, the sales packaging which he had put into circulation and transferred to private final consumers and that he has consigned it at his own cost to recovery in accordance with the requirements set out in No. 1 of Annex I, he can reclaim the fees paid for participation in a compliance scheme pursuant to subsection (3) below. The fifth sentence shall apply *mutatis mutandis* to sales packaging put into circulation by another distributor if this sales packaging is of such type, form and size and used for such products as the distributor supplies in his own product range. The proof pursuant to the fifth sentence above shall meet the requirements set out in No. 4, first to fourth and eighth sentences, of Annex I.

(2) The obligation pursuant to subsection (1) above shall not apply where manufacturers and distributors themselves accept returned packaging they put into circulation at places where packaging arises and which are considered as comparable to private households pursuant to section 3 subsection (11), second and third sentences, at those same places in accordance with section 8, first sentence, and consign it to recovery and where the manufacturer or distributor

or a third party they have commissioned to do so produces a certificate of from an independent expert, verifying that they

1. have set up adequate sector-specific collection structures in the respective *Länder* ensuring regular free of charge collection of packaging in accordance with section 8, first sentence, at all places where packaging arises pursuant to section 3 subsection (11), second and third sentences, and which have been provided with packaging by the manufacturers and distributors, account being taken of existing sector-specific collection structures for sales packaging pursuant to section 7 subsection (1),

2. ensure recovery of the sales packaging in accordance with the requirements set out in Nos. 1 and 4 of Annex I without including in the mass flow verification sales packaging other than the packaging or transport and secondary packaging distributed in the sector in question by participating manufacturers and distributors.

The certificate by the independent expert shall be presented to the competent highest *Land* authority or the authority it designates at least one month before collection starts. The start of the collection shall be notified in writing. Notwithstanding the second and third sentences above, manufacturers, distributors or their agents who, on 1 January 2009, carry out their own recovery operations in conformity with the requirements set out in the first sentence above shall submit the certificate to the competent authority within 30 calendar days after 1 January 2009. Subsection (5), third sentence, and No. 1, No. 2 subsection (4) and No. 4 of Annex I shall apply *mutatis mutandis*.

(3) A compliance scheme shall ensure adequate regular free of charge collection of used and emptied sales packaging from or in the vicinity of the private final consumer throughout the catchment area of the obligated distributor on a full-coverage basis and shall comply with the requirements set out in Annex I. A compliance scheme (scheme operator, applicant) pursuant to the first sentence above shall consign the packaging entering such a collection system to recovery in accordance with the requirements set out in No. 1 of Annex I and shall meet the requirements set out in Nos. 2 and 3 of Annex I. Several compliance schemes can cooperate in the setting up and operation of their compliance schemes.

(4) A compliance scheme pursuant to subsection (3) above shall be coordinated with existing collection schemes run by the public bodies responsible for waste management in whose area

it is set up. Such coordination shall be a prerequisite for the pronouncement pursuant to subsection (5), first sentence. It shall take place in writing. Special attention shall be paid to the interests of the public bodies responsible for waste management. The public bodies responsible for waste management may demand the takeover or joint use, for a suitable fee, of facilities required for collecting materials of the type referred to in Annex I to this Ordinance. Scheme operators may demand that the public bodies responsible for waste management allow them the joint use of these facilities for a suitable fee. In the coordination process, public bodies responsible for waste management may demand collection of non-packaging waste of the same material type for a suitable fee. Scheme operators shall be obligated to bear a share of the costs incurred by the public bodies responsible for waste management as a result of giving waste management advice for their respective compliance schemes and of setting up, allocating, maintaining and cleaning areas for the siting of large collection containers. The coordination shall not conflict with the awarding of contracts for waste management services on a competitive basis. The compliance scheme can accept the coordination agreement already in force in the area of a public body responsible for waste management without the latter having the right to demand new coordination. For each essential change in the framework conditions for the operation of the compliance scheme in the area of the public body responsible for waste management, the latter can demand an appropriate adjustment of the coordination agreement pursuant to the first sentence above.

(5) The highest *Land* authority responsible for waste management or the authority it designates shall, on application by the scheme operator, pronounce that a compliance scheme pursuant to subsection (3) above has been set up on a full-coverage basis. Such pronouncement pursuant to the first sentence above may subsequently be made the subject of collateral clauses that are necessary to ensure that the conditions applying at the time the pronouncement was made are maintained on a long-term basis during the operation of the compliance scheme. The highest *Land* authority responsible for waste management or the authority it designates may require at the time the pronouncement pursuant to the first sentence above is made or afterwards that the scheme operator provides appropriate insolvency-proof security in case he or his representatives cannot meet the obligations under this Ordinance, fully or in part, and the public bodies responsible for waste management or the competent authorities can claim reimbursement of costs for the performance of the necessary substitute measures. The pronouncement shall be made public and shall take effect upon its publication.

(6) The competent authority may revoke its pronouncement pursuant to subsection (5), first sentence, wholly or in part, if it ascertains that the requirements specified in subsection (3) above are not met. It shall make the revocation public. The revocation shall be limited to packaging made of certain materials if only this packaging does not meet the recovery quotas specified in Annex I. The competent authority may furthermore revoke its pronouncement pursuant to subsection (5), first sentence, if it ascertains that the operation of the compliance scheme has been discontinued.

(7) Compliance schemes shall take part in a joint body. This joint body shall have the following tasks in particular:

1. Assessment of the quantities of packaging of several compliance schemes in the area of a public body responsible for waste management to be assigned on a pro rata basis,

2. Allocation of the coordinated supplementary fees,

3. Coordination of tendering in a way that does not distort competition.

The pronouncement pursuant to subsection (5) above shall become ineffective if a compliance scheme does not take part in a joint body within three months after the pronouncement has been made. The joint body shall ensure that all compliance schemes have equal access to it and that provisions on the protection of personal data and of trade and business secrets are met. If decisions affect public bodies responsible for waste management the joint body shall hear the municipal umbrella organisations.

(8) If no compliance scheme pursuant to subsection (3) has been established, all final distributors shall be obligated to accept free of charge used and emptied sales packaging returned by the final consumer at or in the immediate vicinity of the place of actual transfer, to consign it to recovery in accordance with the requirements set out in No. 1 of Annex I and to meet the requirements of No. 4 of Annex I. The recovery requirements may also be met by reuse or transfer to upstream distributors or manufacturers. The final distributor must draw the attention of the final consumer, by means of clearly recognisable and legible notices, to the opportunity to return sales packaging as set out in the first sentence above. The obligation

under the first sentence above shall be limited to packaging of such type, form and size and to packaging of such goods as the distributor supplies in his own product range. In the case of distributors with sales areas of less than 200 m^2, the obligation to accept returned sales packaging shall be limited to the packaging of brands put into circulation by the distributor. In the case of the second sentence above, manufacturers and upstream distributors of packaging pursuant to subsection (1), first sentence, shall be obligated to accept free of charge returned packaging accepted pursuant to the first sentence above at the place of actual transfer, to consign it to recovery in accordance with the requirements set out in No. 1 of Annex I and to meet the requirements of No. 4 of Annex I. Different arrangements may be agreed regarding the place of return and the allocation of costs. The recovery requirements may also be met by means of reuse. The fourth and fifth sentences above shall apply *mutatis mutandis*.

(9) Subsections (1) to (8) shall not apply to sales packaging of pollutant-containing products within the meaning of section 8 nor to one-way drinks packaging subject to a compulsory deposit within the meaning of section 9. This shall be without prejudice to No. 3 subsection (1) of Annex I.

(10) This provision shall not apply to reusable packaging.

Section 7
Obligation to Accept Returned Sales Packaging Not Arising at the Private Final Consumer

(1) Final distributors of sales packaging not arising at the private final consumer shall be obligated to accept free of charge used and emptied sales packaging returned by the final consumer at or in the immediate vicinity of the place of actual transfer and to consign it to recovery. Section 4 subsection (2) shall apply *mutatis mutandis*. The obligation pursuant to the first sentence above shall be limited to packaging of such type, form and size and to packaging of such goods as the distributor supplies in his own product range. Different arrangements may be agreed regarding the place of return and the allocation of costs.

(2) Manufacturers and upstream distributors of packaging pursuant to subsection (1), first sentence above shall be obligated to accept free of charge returned packaging accepted pursuant to subsection (1) at the place of actual transfer and to consign it to recovery. Subsection (1), second to fourth sentences shall apply *mutatis mutandis*.

(3) Manufacturers and distributors pursuant to subsections (1) and (2) can cooperate in fulfilling their obligations under this Ordinance.

Section 8
Obligation to Accept Returned Sales Packaging of Pollutant-Containing Products

(1) Manufacturers and distributors of sales packaging of pollutant-containing products shall be obligated to take suitable measures to ensure that used and emptied packaging can be returned by the final consumer free of charge within a reasonable distance. They must draw attention to this opportunity to return packaging by means of clearly recognisable and legible notices at the point of sale, and in the mail-order trade by means of other suitable measures. Where sales packaging arises other than at private final consumers, different arrangements may be agreed regarding the place of return and the allocation of costs.

(2) The returned packaging shall be consigned to reuse or recovery, packaging pursuant to section 3 subsection (7) No. 3 to recycling, insofar as this is technically possible and economically reasonable.

(3) Manufacturers and distributors of sales packaging of pollutant-containing products shall be obligated to comply *mutatis mutandis* with the requirements set out in No. 4, sentences 1 to 5, of Annex I. The documentation shall be presented on request to the authority responsible for the enforcement of waste law in the area where the manufacturer or distributor is located. No. 4, sentences 13 and 14, of Annex I shall apply *mutatis mutandis*.

Section 9
Obligation to Charge Deposits On and Accept Returned One-Way Drinks Packaging

(1) Distributors who put drinks into circulation in one-way drinks packaging with a filling volume of between 0.1 and 3 litres shall be obligated to charge the purchaser a deposit of at least 25 Euro cents including value-added tax per drinks pack. The first sentence above shall not apply to packaging sold to final consumers outside the territorial scope of this Ordinance. The deposit shall be charged by each further distributor at each distribution level until transfer to the final consumer. Distributors shall mark drinks in one-way drinks packaging subject to a compulsory deposit pursuant to the first sentence above as being subject to such deposit in a clearly legible way and in a conspicuous place and shall take part in a nation-wide deposit scheme that allows members of the scheme to manage deposit return claims among themselves. The deposit shall be refunded on acceptance of the returned packaging. Deposits shall not be refunded without packaging being returned. Section 6 subsection (8) shall apply *mutatis mutandis* to the acceptance of returned packaging. For packaging subject to a compulsory deposit under the first sentence above, in place of section 6 subsection (8), fourth sentence, the obligation to accept returned packaging pursuant to section 6 subsection (8), first sentence shall be limited to packaging of the material type (glass, metals, paper, cardboard or plastics, including all composite packaging containing these main materials) put into circulation by the distributor. For sales from vending machines, distributors shall provide a suitable system for accepting returned packaging and refunding deposits within a reasonable distance from the vending machines. Returned one-way drinks packaging within the meaning of the first sentence above shall primarily be consigned to recycling.

(2) Subsection (1) shall only apply to one-way drinks packaging which is not ecologically advantageous within the meaning of section 3 subsection (4) and which contains the following beverages:

1. Beer (including alcohol-free beer) and mixed drinks containing beer,
2. Mineral waters, spring waters, table waters and remedial waters as well as all other types of drinkable water,
3. Carbonated and non-carbonated soft drinks (specifically lemonades, including cola drinks, fizzy drinks, bitter drinks and ice-tea). Fruit juices, fruit nectars, vegetable juices, vegetable nectars, drinks with a minimum of 50 per cent milk or other milk-derived products and mixes of such drinks as well as dietetic drinks within the meaning of section 1 subsection (2) (c) of the Ordinance on Dietetic Foodstuffs *(Diätverordnung)* offered for sale exclusively for babies and small children, shall not be soft drinks within the meaning of sentence 1.
4. Mixed alcoholic drinks
   a) produced using
      - aa) products which are subject to spirits tax under section 130 subsection (1) of the Federal Spirits Monopoly Act *(Branntweinmonopolgesetz)* or
      - bb) fermentation alcohol made from beer, wine or wine-like products, including in processed form, which has undergone technical treatment no longer meeting the requirements for good manufacturing practice

      and contains less than 15 per cent alcohol per volume or
   - containing less than 50 per cent wine or wine-like products, including in processed form.

(3) Manufacturers and distributors of ecologically advantageous one-way drinks packaging as well as of one-way drinks packaging which is not subject to a compulsory deposit pursuant to subsection (2) above shall be obligated to take part in a compliance scheme pursuant to section 6 subsection (3) insofar as such packaging arises at the private final consumer.

Section 10
Declaration of Compliance for Sales Packaging put into Circulation

(1) By 1 May each year, all actors putting sales packaging pursuant to section 6 into circulation shall be obligated to submit a declaration of compliance, audited by an accountant, tax consultant, registered auditor or independent expert pursuant to No. 2 subsection (4) of Annex I for all sales packaging they have filled with product and put into circulation for the first time in the previous calendar year, and to deposit it in accordance with subsection (5).

(2) The declaration shall contain information on
1. the type of material and the mass of the sales packaging according to sections 6 and 7 put into circulation in the previous calendar year, with separate information on the material types enumerated in No. 1 subsection (2) of Annex I,
2. the participation in compliance schemes pursuant to section 6 subsection (3) for the sales packaging destined to arise at private final consumers,
3. the type of material and the mass of the sales packaging put into circulation in the previous calendar year according to section 6 subsection (2), including the name of the person depositing the evidence pursuant to No. 4 of Annex I,
4. compliance with the recovery requirements pursuant to section 7.

(3) Distributors putting into circulation for the first time service sales packaging filled with product within the meaning of section 3 subsection (1) No. 2, second sentence, which typically arises at the private final consumer, can demand that the manufacturers or distributors or upstream distributors of such service packaging assume the obligation pursuant to subsection (1), first sentence, insofar as they take part in one or several compliance schemes pursuant to section 6 subsection (3) with respect to the service packaging they provide.

(4) Manufacturers and distributors putting into circulation sales packaging pursuant to section 6 in quantities exceeding 80,000 kg per calendar year for packaging made of glass or exceeding 50,000 kg for packaging made of paper and cardboard or exceeding 30,000 kg for packaging made of the other material types enumerated in No.1 subsection (2) of Annex I, shall submit a declaration of compliance pursuant to subsection (1) at annual intervals. If the amount is below the threshold quantities set out in the first sentence above, declarations of compliance shall only be submitted if the authorities responsible for waste management control so request.

(5) Manufacturers and distributors shall deposit the declaration of compliance with the local Chamber of Industry and Commerce electronically for a period of three years in accordance with the requirements set out in Annex VI. The audit certificate pursuant to subsection (1), first sentence, established by an accountant, tax consultant, registered auditor or independent expert pursuant to No. 2 subsection (4) of Annex I shall bear a qualified digital signature in

accordance with section 2 of the Digital Signature Act (*Signaturgesetz*). The local Chambers of Industry and Commerce shall be in charge of operating the depository. They shall inform the public regularly via the internet on who has submitted a declaration of compliance. They shall allow any authority responsible for the control of waste management provisions to consult the declarations of compliance deposited. For the purpose of complying with their obligations pursuant to this subsection, they shall make use of the body designated pursuant to section 32 subsection (2) of the Environmental Audit Act (*Umweltauditgesetz*) in the version promulgated on 4 September 2002 (Federal Law Gazette I p. 3490), as last amended by Article 8 subsection (1) of the Act of 4 December 2004 (Federal Law Gazette I p. 3166).

(6) Compliance schemes (scheme operators, applicants) pursuant to section 6 subsection (3) shall be obligated to deposit the information pursuant to subsection (2) No. 2 on participation in their scheme for the previous calendar year with the organisation mentioned in subsection (5), sixth sentence, by 1 May each year. Subsection (5), fifth sentence, shall apply *mutatis mutandis*.

(7) Compliance schemes pursuant to section 6 subsection (3) shall reimburse the body pursuant to subsection (5), sixth sentence, for the necessary costs and outlays for depositions pursuant to subsections (5) and (6) and the establishment and operation of the depository. The body pursuant to subsection (5), sixth sentence, shall determine the proportionate cost for the individual compliance schemes pursuant to section 6 subsection (3) as corresponds to the proportion of the number of scheme participations they have submitted in accordance with subsection (6). In this sense, compliance schemes pursuant to section 6 subsection (3) shall be jointly and severally liable.

Section 11
Authorisation of Third Parties

Manufacturers and distributors may call upon third parties to fulfil the obligations laid down in this Ordinance. Acceptance of returned packaging and refunding of deposits may also be performed by machine. Section 16 subsection (1), second and third sentences, of the Closed Substance Cycle and Waste Management Act (*Kreislaufwirtschafts- und Abfallgesetz*) shall apply *mutatis mutandis*.

Part III

Manufacture, Putting into Circulation and Labelling of Packaging

Section 12

General Requirements

Packaging shall be manufactured and distributed such that

1. pack volume and weight are reduced to the minimum commensurate with maintaining the necessary safety and hygiene of the packaged product and ensuring that it is acceptable to the consumer;
2. it may be reused or recovered and the environmental impacts arising from the recovery or disposal of packaging waste are minimised;
3. harmful and hazardous substances and materials occurring in emissions, ash or leachate on disposal of packaging or packaging components are minimised.

Section 13

Heavy Metal Concentrations

(1) Packaging or packaging components may only be put into circulation if the cumulative concentration of lead, cadmium, mercury and hexavalent chromium does not exceed 100 milligrammes per kilogramme.

(2) Subsection (1) above shall not apply to

1. packaging manufactured entirely from lead crystal glass,
2. packaging in established systems for reuse,
3. plastic crates or plastic pallets that meet the requirements of Annex II.

(3) Notwithstanding the provisions of subsection (1) above, a limit value of 250 milligrammes per kilogramme shall apply to packaging made from miscellaneous glass that complies with the conditions of Annex III.

Section 14

Marking

To identify the material, packaging may be marked with the numbers and abbreviations laid down in Annex IV. The use of other numbers and abbreviations to identify the same materials shall not be permitted.

Part IV
Administrative Offences, Transitional and Concluding Provisions

Section 15

Administrative Offences

An administrative offence within the meaning of section 61 subsection (1) No. 5 of the Closed Substance Cycle and Waste Management Act *(Kreislaufwirtschafts- und Abfallgesetz)* shall be deemed to be committed by any person who deliberately or negligently

1. in contravention of section 4 subsection (1), first sentence, or subsection (2), first sentence, fails to accept returned packaging after use or to do so in time or to consign it to reuse or recycling,

2. in contravention of section 5 subsection (1), first sentence, fails to remove secondary packaging or to do so in time and fails to give the final consumer the opportunity to remove or return secondary packaging,

3. in contravention of section 5 subsection (2), section 6 subsection (8), third sentence, or section 8 subsection (1), second sentence, fails to draw the attention to the opportunity to return packaging or to do so properly or completely,

4. in contravention of section 5 subsection (3), first sentence, fails to provide collection containers or to provide them in the prescribed manner,

5. in contravention of section 5 subsection (3), third sentence fails to consign secondary packaging to reuse or recycling,

6. in contravention of section 6 subsection (1), first sentence, fails to take part in a compliance scheme mentioned therein,

7. in contravention of section 6 subsection (1), third sentence, transfers packaging to final consumers,

8. in contravention of section 6 subsection (2), fifth sentence, in conjunction with No. 4, second or third sentence of Annex I, fails to draw up documentation or to do so properly, completely or in time,

9. in contravention of section 6 subsection (2), fifth sentence, in conjunction with No. 4, ninth sentence of Annex I, fails to deposit a certificate or to do so properly, completely or in time,

10. in contravention of section 6 subsection (2), fifth sentence, in conjunction with No. 4, eleventh sentence of Annex I, fails to submit documentation or to do so in time,

11. in contravention of section 6 subsection (3), second sentence, fails to consign packaging to recovery,

12. in contravention of section 6 subsection (3), second sentence, in conjunction with No. 2 subsection (1), first sentence of Annex I, fails to ensure the collection of packaging,

13. in contravention of section 6 subsection (3), second sentence, in conjunction with No. 2 subsection (3), third sentence of Annex I, fails to furnish evidence or to do so properly, completely or in time,

14. in contravention of section 6 subsection (3), second sentence, in conjunction with No. 2 subsection (3), fifth sentence of Annex I, fails to deposit a certificate or to do so properly, completely or in time,

15. in contravention of section 6 subsection (3), second sentence, in conjunction with No. 2 subsection (3), seventh sentence of Annex I, fails to present evidence or to do so in time,

16. in contravention of section 6 subsection (3), second sentence, in conjunction with No. 3 subsection (3), first sentence of Annex I, fails to furnish evidence or to do so properly, completely or in time,

17. in contravention of section 6 subsection (8), first or sixth sentence, fails to accept returned sales packaging or to consign it to recovery,

18. in contravention of section 6 subsection (8), first or sixth sentence, each in conjunction with No. 4, second or third sentence of Annex I, fails to draw up documentation or to do so properly, completely or in time,

19. in contravention of section 6 subsection (8), first or sixth sentence, each in conjunction with No. 4, ninth sentence of Annex I, fails to deposit a certificate or to do so properly, completely or in time,

20. in contravention of section 6 subsection (8), first or sixth sentence, each in conjunction with No. 4, eleventh sentence of Annex I, fails to present documentation or to do so in time,

21. in contravention of section 7 subsection (1), first sentence, or subsection (2), first sentence, fails to accept returned sales packaging or to consign it to recovery,

22. in contravention of section 8 subsection (1), first sentence, fails to ensure that packaging can be returned,

23. in contravention of section 8 subsection (2), fails to consign returned packaging to reuse or recovery,

24. in contravention of section 8 subsection (3), first sentence, in conjunction with No. 4, second or third sentence of Annex I, fails to draw up documentation or to do so properly, completely or in time,

25. in contravention of section 8 subsection (3), second sentence, fails to present documentation or to do so in time,

26. in contravention of section 9 subsection (1), first, third or fifth sentence, fails to charge a deposit or to refund it or to do so in time,

27. in contravention of section 9 subsection (1), fourth sentence, fails to mark a one-way drinks packaging or to do so properly or in time or to take part in a nation-wide deposit scheme,

28. in contravention of section 9 subsection (1), sixth sentence, refunds a deposit without the packaging being returned,

29. in contravention of section 10 subsection (1), first sentence, fails to submit a declaration of compliance or to do so properly, completely or in time or to deposit it or to do so properly, completely, in the prescribed way or in time,

30. in contravention of section 10 subsection (6), first sentence, fails to submit information or to do so properly, completely or in time,

31. in contravention of section 13 subsection (1) puts into circulation packaging or parts thereof,

32. in contravention of section 14, second sentence, uses other numbers or abbreviations.

Section 16
Transitional Provisions

(1) Packaging that was used for goods before the entry into force of this Ordinance may be put into circulation notwithstanding sections 13 and 14.

(2) Until 31 December 2012, sections 6 and 7 shall not apply to plastic packaging made from biodegradable materials, all components of which are deemed compostable according to producer-independent certification conducted using recognised standards. Producers and distributors shall ensure that the share of packaging recovered is as high as possible. Until 31 December 2012, section 9 shall not apply to plastic one-way drinks packaging complying with the provisions of the first sentence above and made from renewable resources to at least 75 percent, insofar as manufacturers and distributors take part in one or several compliance schemes under section 6 subsection (3) with respect to this packaging. Compliance with the condition stated in the third sentence above, according to which the one-way drinks package must be made of at least 75 percent renewable resources, must be verified by an independent expert within the meaning of No. 2 subsection (4) of Annex I. In other respects section 9 shall remain unaffected. In the case described in the third sentence and where one-way drinks packaging made from biodegradable plastics pursuant to the first sentence above is not subject to the mandatory deposit pursuant to section 9 subsection (2), in derogation from the first sentence above, manufacturers and distributors shall take part in a compliance scheme pursuant to section 6 subsection (3) with respect to this packaging insofar as the packaging arises at the private final consumer.

(3) Section 10 shall apply subject to the proviso that the declaration pursuant to section 10 subsection (1) shall be deposited for the first time by 1 May 2009 for packaging put into circulation in 2008 on or after 5 April 2008.

The *Bundesrat* has given its consent.

Annex I
(to section 6)

1. Requirements for Recovery of Sales Packaging Arising at the Private Final Consumer

(1) Compliance schemes pursuant to section 6 subsection (3) shall meet the recovery requirements set out in subsections (2) to (4) below for the packaging with regard to which manufacturers and distributors take part in their scheme.

(2) On average for the year, at least the following quantities of packaging in percent by weight must be consigned to recycling:

Material	
Glass	75 %
Tinplate	70 %
Aluminium	60 %
Paper, cardboard	70 %
Composites	60 %

Where composites are consigned to a separate recovery channel, separate evidence of the quota pursuant to the first sentence above shall be permissible. For composites which are collected and consigned to recovery in one of the streams of the above-mentioned main materials, the quota pursuant to the first sentence above shall be verified by suitable sampling. It must be ensured that composites are recycled with their principal material component unless recycling of a different material component approximates more closely to the objectives of closed substance cycle management, and that the other components are also recovered. At least 60 percent of plastic packaging must be consigned to recovery and at least 60 percent of this recovery quota shall be ensured by processes in which new material of the same substance is replaced or the plastic remains available for further use as a material (mechanical recycling).

(3) Packaging made from materials for which no definite recovery quotas are specified shall be consigned to recycling insofar as this is technically possible and economically reasonable.

In the case of packaging manufactured directly from renewable raw materials, energy recovery shall be deemed equivalent to recycling.

(4) Notwithstanding subsection (2) above, the quantity of packaging actually collected shall be consigned to recovery insofar as this is technically possible and economically reasonable. This provision shall also apply where facilities of the public bodies responsible for waste management are jointly used in accordance with section 6 subsection (4). It shall otherwise be disposed of in accordance with the principles of waste disposal commensurate with the public good pursuant to sections 10 and 11 of the Closed Substance Cycle and Waste Management Act *(Kreislaufwirtschafts- und Abfallgesetz)*; where it is not disposed of in installations of its own or where overriding public interests so require, it shall be made available to the public bodies responsible for waste management.

2. General Requirements for Compliance Schemes pursuant to section 6 subsection (3)

(1) Operators of compliance schemes pursuant to section 6 subsection (3) shall ensure that packaging is collected from the private final consumer ("kerbside systems") or collected from the vicinity of the private final consumer by means of suitable collection systems ("drop-off systems"), or by a combination of the two systems. The collection systems must be designed to ensure regular collection of all packaging covered by the compliance scheme. Collection shall be confined to private final consumers.

(2) Operators of compliance schemes pursuant to section 6 subsection (3) shall ensure that

1. recovery capacity actually exists for the packaging entering the compliance scheme,
2. the materials recovery requirements set out in No. 1 of this Annex are shown to be met and
3. in the event that operation of the compliance scheme is discontinued, the packaging actually collected by the compliance scheme's collection facilities shall be recovered or disposed of.

(3) Operators of compliance schemes pursuant to section 6 subsection (3) shall furnish verifiable evidence of the quantities collected and the quantities consigned to recycling and to energy recovery. The evidence shall include a verifiable account of the quantities collected in the individual *Länder*. Such evidence shall be furnished by 1 May of the following year on the basis of the quantity of packaging fed into the compliance scheme as shown by the applicant,

broken down by packaging materials. Compliance with the collection and recovery requirements shall be certified by an independent expert pursuant to subsection (4) below on the basis of the evidence furnished. The certificate shall be deposited by the scheme operator with the body designated pursuant to section 32 subsection (2) of the Environmental Audit Act (*Umweltauditgesetz*) no later than 1 June. The certificate shall be submitted by this body to the highest *Land* authority responsible for waste management or to the authority it designates. The corresponding evidence pursuant to the first sentence above shall be presented to the authority on request.

(4) An independent expert within the meaning of subsection (3) above is

1. a person whose qualifications have been ascertained by a member of the German Accreditation Council *(Deutscher Akkreditierungsrat)* in a generally recognised procedure,
2. an independent environmental verifier pursuant to section 9 or an environmental verification organisation pursuant to section 10 of the Environmental Audit Act *(Umweltauditgesetz)* or
3. a person publicly appointed pursuant to section 36 of the Trade Code *(Gewerbeordnung)*.

3. Participation in Compliance Schemes pursuant to Section 6 Subsection (3)

(1) As a basic principle, packaging of products within the meaning of section 8 may not be fed into compliance schemes pursuant to section 6 subsection (3). The applicant may include such packaging in his compliance scheme if manufacturers or distributors present *prima facie* evidence of its compatibility with the compliance scheme in the form of an expert opinion by an independent expert which takes normal consumer behaviour into account.

(2) The scheme operator shall furnish the participating manufacturers and distributors with confirmation of their participation in the compliance scheme.

(3) The applicant shall by 1 May each year furnish the application authority with evidence of the extent to which manufacturers or distributors have fed sales packaging into his compliance scheme in the previous year within the territorial scope of this Ordinance. Such evidence, broken down by packaging materials, shall be certified by an auditor. All packaging with

regard to which the manufacturers or distributors take part in the compliance scheme shall be deemed to have been fed into the compliance scheme.

(4) The application authority may, at the applicant's expense, perform an inspection of the evidence itself or have such inspection performed by a suitable institution. Insofar as there is reason to fear that the inclusion of packaging in the compliance scheme may result in adverse impacts on the public good, and especially on people's health and well-being, the application authority may demand that the applicant produce *prima facie* evidence of the compatibility of the relevant packaging with the compliance scheme. In individual cases the application authority may prohibit the inclusion of the packaging if no *prima facie* evidence of its compatibility with the compliance scheme is produced.

4. General Requirements for Obligated Parties pursuant to Section 6 Subsection (8)

Manufacturers and distributors obligated to accept returned packaging pursuant to section 6 subsection (8) shall furnish evidence of compliance with the acceptance and recovery requirements. To this end they shall by 1 May each year draw up verifiable documentation of the sales packaging put into circulation and returned and recovered in the previous calendar year. Such documentation shall be drawn up in terms of weight, broken down by individual packaging materials. Reusable packaging and return one-way drinks packaging for which a deposit is charged pursuant to section 9 subsection (1), first sentence, shall not be included in the documentation. Cooperation between several manufacturers and distributors shall be permissible. Each of these manufacturers and distributors shall ensure compliance with the acceptance and recovery requirements pursuant to section 6 subsection (8) by creating the appropriate collection and recovery structures. In this case, it is sufficient that the cooperating manufacturers and distributors comply with the recovery requirements as a group. Compliance with the acceptance and recovery requirements shall be certified by an independent expert pursuant to No. 2 subsection (4) above on the basis of the documentation. The certificate of compliance shall be deposited by the obligated manufacturers and distributors with the body designated pursuant to section 32 subsection (2) of the Environmental Audit Act *(Umweltauditgesetz)* no later than 1 June. The certificate shall be presented by the body referred to in the ninth sentence above to the highest *Land* authority responsible for waste management or the authority it designates. The corresponding documentation pursuant to the second and third sentences above shall be presented to the

competent authority on request. In the case of a cooperation between several manufacturers and distributors pursuant to the fifth sentence above, the certificate shall identify all cooperating manufacturers and distributors with names and headquarters. Distributors with a sales area of less than 200 m^2 who are obligated to accept returned packaging pursuant to section 6 subsection (8) may invoke the certificate for the preceding distribution level. In the case of manufacturers and distributors with several branches, the sales area shall be the total area of all branches.

Annex II

(to section 13 subsection (2))

Specification of conditions under which plastic crates and plastic pallets are exempted from the limit values for heavy metals laid down in section 13 subsection (1)

No. 1 Scope of Application

The limit value laid down for heavy metals in section 13 subsection (1) shall not apply to plastic crates and plastic pallets used in product loops which are in a closed and controlled chain.

No. 2 Definition of Terms

For the purposes of this specification, the following definitions shall apply:

- "Intentional introduction":
  The act of deliberately utilising a substance in the formulation of a packaging or a packaging component where its continued presence is desired in the packaging or packaging component to provide a specific characteristic, appearance or quality. The use of recycled materials as feedstock for the manufacture of new packaging materials, where some portion of the recycled materials may contain amounts of regulated metals, is not considered intentional introduction.

- “Incidental presence”:
  The presence of a metal as an unintended ingredient of a packaging or packaging component.

- “Product loops which are in a closed and controlled chain”:
  Product loops in which products circulate with a controlled reuse and distribution system and in which the recycled material originates only from these entities in the chain so that the introduction of external material is just the minimum technically feasible and from which these entities may only be removed in a specially authorised procedure so that return rates are maximised.

No. 3 Manufacture and labelling

(1) Manufacture shall follow a controlled process of substance recycling in which the recycled material is produced using solely plastic crates and plastic pallets and in which the introduction of substances not stemming from the cycle is restricted to the minimum technically feasible, up to a maximum of 20 percent by weight.

(2) Lead, cadmium, mercury and hexavalent chromium shall not be deliberately added during the manufacturing process or during distribution. The incidental presence of any of these substances shall remain unaffected hereby.

(3) The limit value may be exceeded only as a result of the addition of recycled materials.

(4) New plastic crates or pallets containing the regulated metals shall be identified in a permanent and visible way.

No. 4 System requirements and other management options

(1) A system of inventory and record keeping shall be established, including a method of regulatory and financial accountability, to document the compliance with the requirements of Nos. 3 and 4, including the return rates, that is, the percentage of returnable entities which are

not discarded after use but are returned to the manufacturer or packer / filler or an authorised representative and shall be as high as possible but in no case lower than 90 percent over the lifetime of the plastic crates or plastic pallets. The system shall account for all the reusable entities put into, and removed from, service.

(2) All returned plastic crates and plastic pallets that are no longer reusable shall either be consigned to a process of substance recycling with a view to producing new plastic crates and plastic pallets as specified in No. 3 or be disposed of in a manner that is commensurate with the public good.

No. 5 Declaration of Conformity and Annual Report

(1) The manufacturer or its authorised representative shall on an annual basis issue a written declaration of conformity stating that the plastic crates and plastic pallets manufactured in accordance with this Annex meet the requirements laid down in this Ordinance. It shall furthermore draw up an annual report to specify how the requirements of the Annex are complied with. The report shall in particular specify any changes to the system and any change with regard to the authorised representatives.

(2) The manufacturer or its authorised representative shall keep this documentation in their archives for at least four years and submit them to the competent authority on request.

(3) Where neither the manufacturer nor his authorised representative is established within the territorial scope of this Ordinance, the obligation to keep this documentation available shall be the responsibility of the person who puts the product into circulation within the territorial scope of this Ordinance.

Annex III

(to section 13 subsection (3))

Specification of conditions under which glass packaging is exempted from the limit value for heavy metals laid down in section 13 subsection (1)

No. 1 Definition of Terms

For the purposes of this specification, the definitions in No. 2 of Annex II to section 13 subsection (2) shall apply for the terms “intentional introduction” and “incidental presence”.

No. 2 Manufacture

(1) Lead, cadmium, mercury and hexavalent chromium shall not be deliberately added during the manufacturing process.

(2) The limit value laid down in section 13 subsection (1) may be exceeded only as a result of the addition of recycled materials.

No. 3 Monitoring

(1) Should the average concentration of heavy metals exceed the limit value of 200 mg/kg during monthly checks of the production of every individual glass furnace over a period of twelve consecutive months that are representative for normal and regular production, the manufacturer or its authorised representative shall submit a report to the competent authority. This report must contain at least the following information:

- measured values,
- description of the measuring methods used,
- suspected sources for the presence of heavy metal concentration limit values
- detailed description of measures taken to reduce the concentration limit values.

(2) Measuring results from production workshops and the measuring methods used shall be archived for at least three years and shall be submitted to the competent authority on request.

(3) Where neither the manufacturer nor its authorised representative is established within the territorial scope of this Ordinance, the obligations from subsections 1 and 2 shall be the responsibility of the person who puts the product into circulation within the territorial scope of this Ordinance.

Annex IV
(to section 14)

1. Numbers and Abbreviations for Plastics

Substance	Abbreviation	Number
Polyethylene terephthalate	PET	1
Polyethylene (high density)	HDPE	2
Polyvinylchloride	PVC	3
Polyethylene (low density)	LDPE	4
Polypropylene	PP	5
Polystyrene	PS	6
		7
		8
		9
		10
		11
		12
		13
		14
		15
		16
		17
		18
		19

2. Numbers and Abbreviations for Paper and Cardboard

Substance	Abbreviation	Number
Corrugated cardboard	PAP	20
Other cardboard	PAP	21
Paper	PAP	22
		23
		24
		25
		26
		27
		28
		29
		30
		31
		32
		33
		34
		35
		36
		37
		38
		39

3. Numbers and Abbreviations for Metals

Substance	Abbreviation	Number
Steel	FE	40
Aluminium	ALU	41
		42
		43
		44
		45
		46
		47
		48
		49

4. Numbers and Abbreviations for Wood Materials

Substance	Abbreviation	Number
Wood	FOR	50
Cork	FOR	51
		52
		53
		54
		55
		56
		57
		58
		59

5. Numbers and Abbreviations for Textiles

Substance	Abbreviation	Number
Cotton	TEX	60
Jute	TEX	61
		62
		63
		64
		65
		66
		67
		68
		69

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6. Numbers and Abbreviations for Glass

Substance	Abbreviation	Number
Colourless glass	GL	70
Green glass	GL	71
Brown glass	GL	72
		73
		74
		75
		76
		77
		78
		79

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7. Numbers and Abbreviations for Composite Materials

Substance	Abbreviation(*)	Number
Paper and cardboard / Miscellaneous metals		80
Paper and cardboard / Plastic		81
Paper and cardboard / Aluminium		82
Paper and cardboard / Tinplate		83
Paper and cardboard / Plastic / Aluminium		84
Paper and cardboard / Plastic / Aluminium / Tinplate		85
		86
		87
		88
		89
Plastic / Aluminium		90
Plastic / Tinplate		91
Plastic / Miscellaneous metals		92
		93
		94
Glass / Plastic		95
Glass / Aluminium		96
Glass / Tinplate		97
Glass / Miscellaneous metals		98
		99

(*) For composites use **C** plus abbreviation for principal component (C/).

Annex V

(to section 3 subsection (1) No. 1)

1. **Criteria for the definition of "packaging" pursuant to section 3 subsection (1) No. 1**

(a) Items shall be considered to be packaging if they fulfil the definition mentioned in section 3 subsection (1) No. 1 without prejudice to other functions which the packaging might also perform, unless the item is an integral part of a product and it is necessary to contain, support or preserve that product throughout its lifetime and all elements are intended to be used, consumed or disposed of together.

(b) Items designed and intended to be filled at the point of sale and "disposable" items sold filled or designed and intended to be filled at the point of sale shall be considered to be packaging provided they fulfil a packaging function.

(c) Packaging components and ancillary elements integrated into packaging shall be considered to be part of the packaging into which they are integrated. Ancillary elements hung directly on, or attached to, a product and which perform a packaging function shall be considered to be packaging unless they are an integral part of this product and all elements are intended to be consumed or disposed of together.

2. **Illustrative examples for the criteria**

Illustrative examples for criterion (a)

Items that are considered as packaging:

- Sweet boxes
- Film overwrap around a CD case

Items that are not considered as packaging:

- Flower pots intended to stay with the plant throughout its life
- Tool boxes

- Tea bags
- Wax layers around cheese
- Sausage skins

Illustrative examples for criterion (b)

Items that are considered as packaging, if designed and intended to be filled at the point of sale:

- Paper or plastic carrier bags
- Disposable plates and cups
- Cling film
- Sandwich bags
- Aluminium foil

Items that are not considered as packaging:

- Stirrer
- Disposable cutlery

Illustrative examples for criterion (c)

Items that are considered as packaging:

- Labels hung directly on or attached to a product

Items that are not considered as packaging:

- Mascara brush which forms part of the container closure
- Sticky labels attached to another packaging item
- Staples
- Plastic sleeves
- Device for measuring dosage which forms part of the container closure for detergents.

- **Annex VI**

- (to section 10 subsection (5))

1. Technical requirements for the deposition of data

The deposition of data pursuant to section 10 subsections (5) and (6) with the Chambers of Industry and Commerce or the body established under section 32 subsection (2) of the Environmental Audit Act (*Umweltauditgesetz*) shall be carried out exclusively in electronic form in an internet-based data base established and run by the depository. The audit certificate pursuant to section 10 subsection (1) must carry a qualified digital signature pursuant to section 2 of the Digital Signature Act (*Signaturgesetz*).

2. Data to be submitted by the obligated companies

Companies that deposit a declaration of compliance pursuant to section 10 subsection (5), first sentence, shall indicate the following data:

a) full name of the company,
b) address and contact details of the company (telephone, fax and e-mail),
c) name and contact details of a responsible person,
d) VAT identification number (if no such number exists, the reference number used for the VAT declaration).

Scheme operators depositing information on participation in their compliance schemes pursuant to section 10 subsection (6), first sentence, shall be obligated to register without delay with the competent body pursuant to section 10 subsection (5), sixth sentence, each time a pronouncement pursuant to section 6 subsection (3) is made for the first time in a *Land* and to submit the data enumerated in No. 2 (a)-(c).

3. Arrangements concerning the declaration of compliance

The obligated company shall enter the data enumerated in No. 2 above in the database established by the Chambers of Industry and Commerce. The document generated by the database after entry of the data shall be confirmed by an authorised person pursuant to section 10 subsection (1).