Technical delivery conditions for welded components

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Foreword

These terms of delivery apply in all cases in which reference is made to them in other documents (e.g. in technical drawings or other technical product documentation, inquiries, orders, contracts, etc.). They are to be used in conjunction with all parts of the ISO 3834. These terms of delivery expressly apply to both complete and incomplete products within the meaning of the Machinery Directive 2006/42/EC. The basis for the delivery of welded assemblies to the customer Hubtex Maschinenbau GmbH & Co. KG is the supplier approval by the responsible welding coordinator (RWC).

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1.1 Terms

Customer

Organization responsible for defining the technical requirements, quality requirements and acceptance procedures for the welded product

Supplier

Organization responsible for the welding production of a part to be delivered to the customer [based on the term "manufacturer" according to ISO 3834-1: 2006-03].

Subcontractor

Organization responsible for the welding production of a part to be delivered to the supplier or sub-supplier

1.2 Customer and supplier obligations

For welded components within the scope of the ISO 3834 series, the supplier must fulfill the welding quality, production and documentation demands in accordance with the required level of the quality of this standard and those of the customer, including these delivery conditions, drawing requirements and parts lists, and provide the welding verification described therein.

By submitting its offer or accepting the order, the Supplier warrants that it possesses the valid certificates and will maintain them until the end of the contract; the Customer must be notified of any changes in this respect.

All relevant standards, guidelines and other rules of technology in accordance with the ISO 3834 series or DVS (German welding society) guideline 1901-2 must be observed.

The same contractual conditions apply to any subcontractors of the supplier as to the supplier itself. The supplier must forward all contractual requirements to its subcontractors. Should further sub-suppliers of welded assemblies be required during order processing, a written consent of a RWC of the customer is required in advance.

The supplier must demonstrably audit the subcontractors for compliance with the ISO 3834 series before the start of production and hand over the reports to the customer. The customer is also entitled to audit the subcontractors.

1.2.1 Qualification of welding and cutting processes, welders and operators

It is explicitly pointed out that the manufacturer must only use welders and operators with a qualification certificate. The scope of a welder's qualification certificate specified in ISO 9606 (weld and material thickness, welding position, material, etc.) is binding. Operators must be

qualified in accordance with ISO 14732, with proof of competence to be provided every 6 months. The customer must be granted access to test certificates on request.

If a welding process other than 111 (SMAW), 135 (MAG), 141 (TIG) (process numbers according to ISO 4063) is to be used, written approval must be obtained from the customer beforehand. In general, the weld evaluation group defined on the drawing in accordance with ISO 5817 applies, with the addition that weld spatter must be completely removed. Tack welds that are not part of the subsequent weld seam (e.g. internal invisible tack welds) must be executed as short (approx. 30 - 50 mm, depending on component size and material thickness) single pass beads (a = 3 - 5 mm).

The welding procedures used must be qualified in accordance with the general rules of ISO 15607. The applicable qualification methods depending on the required level of quality requirements can be found Table1 . One of the qualification methods marked with ● must be used for each welding process.

Each WPS (*Welding Procedure Specification*) must comply with the content requirements of ISO 15609-1 or ISO 14555 for stud welding processes.

Table1 : Qualification of welding processes

Quality requirements			**Method of qualification**	
DIN EN ISO 3834-2	**DIN EN ISO 3834-3**	**DIN EN ISO 3834-4**	**Description**	**Standard**
		●	tested welding consumables	ISO 15610
	●	●	Standard welding procedure	ISO 15612
●	●	●	Pre-production welding test	ISO 15613
●	●	●	Welding procedure test	ISO 15614

1.2.2 Regulations for the construction

For welded assemblies designed by the customer and the supplier, the necessary quality requirements, e.g. in accordance with the ISO 3834 series of standards, must be specified in the design documents.

Components without specification of quality requirements are to be classified after consultation with the customer and with the involvement of the responsible design engineer and a RWC. The classification must be documented. A welded assembly without specified quality requirements will result in rejection of the delivery.

Unless otherwise specified in the order or the documents accompanying production, ISO 9013-432 applies to thermally cut individual parts, the minimum requirements according to ISO 13920 apply to the shape and position of a welded structure, as well as the requirements for the quality of weld seams according to ISO 5817-C. A gradation of the evaluation group

or individual criteria is only possible with the approval of the customers RWC. The details must be noted in the production documents.

ISO 10042 is to be applied in the same way for aluminum welded assemblies.

1.2.3 Test planning, testing, documentation and traceability

The supplier must nominate a responsible welding coordinator or an equally authorized representative to the customer as a contact person for technical welding affairs.

All documents relating to welding quality, production and documentation requirements in accordance with ISO 3834 have to be made available to the customer on request.

All weld seams must be subjected to a 100% visual inspection in accordance with ISO 17637. If irregularities are detected during the visual inspection, the performance of further non-destructive tests, such as penetrant testing (PT) or magnetic particle testing (MT), is at the discretion of the inspector. If further non-destructive tests on weld seams are required for specific components, these are specified in the design documents for the welded assembly.

A traceability marking must be provided for certain assemblies. This includes an abbreviation of the supplier before the last five digits of the order number, as well as the stamp of the welder/inspector. The position of the stamp is marked in the technical drawings or specified in document 1.1.4.074, which is provided by the customer on request.

1.2.4 Materials

Only the materials specified in the drawing or order may be used. If other materials are used, written approval must be obtained from the customer. If a material specification is missing or unclear, the customer must be contacted.

Upon request, the supplier shall provide inspection certificates 3.1 in accordance with EN 10204 for all semi-finished products used upon or after delivery of the components. The original test certificates must be archived by the supplier for at least 15 years in such a way that traceability to the order is guaranteed. For semi-finished products made of unalloyed structural steels with a minimum yield strength $R_e \leq$ 275 MPa and steel grade group JR or J0, a test certificate 2.2 in accordance with EN 10204 is sufficient

Only welding consumables bearing a CE mark may be used. The supplier must provide the customer with the DB (*Deutsche Bahn, eng., German railway company*) approval or a certificate in accordance with EN 10204 on request. These documents must be archived as described above.

2. Contact for queries

Any queries can be directed to the contact person from the purchasing department. This person establishes the connection between the RWC of the manufacturer and the customer. In the case of direct welding-related questions, the manufacturer can also contact the customer's RWC directly (see below for contact details). However, the responsible purchaser must always be included in the copy, as all information must come together with the responsible purchaser.

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