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Welding coordination — Tasks and responsibilities

Coordination en soudage — Tâches et responsabilités

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Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 14731 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 11, *Approval requirements for welding and allied processes personnel*.

Annex A of this International Standard is for information only.

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Introduction

Welding is a special process which requires the coordination of welding operation in order to establish confidence in welding fabrication and reliable performance in service. The tasks and responsibilities of personnel involved in welding related activities, e.g. planning, executing, supervising and inspection, should be clearly defined.

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Welding coordination — Tasks and responsibilities

1 Scope

This International Standard identifies the quality related responsibilities and tasks included in the coordination of welding related activities.

In any manufacturing organization welding coordination may be undertaken by one or a number of persons.

Welding coordination requirements can be specified by a manufacturer, contract or an application standard.

2 Definitions

For the purpose of this standard the following definitions apply.

2.1 manufacturing organization: Welding workshops or sites under the same technical and quality management.

2.2 welding coordination personnel: Personnel who have responsibilities in the manufacturing operation for welding and welding related activities and whose competence and knowledge has been demonstrated by e.g. training, education and/or relevant manufacturing experience.

A welding coordinator is a person carrying out one or more coordination tasks.

2.3 welding inspection: Examining, testing and measuring of welding related matters.

3 Tasks and responsibilities

3.1 Quality related activities

Table 1 shall be used as a guide to allocate quality-related tasks and responsibilities to welding coordination personnel. It may be supplemented for special applications. Not all the items will necessarily apply to all manufacturing organizations or quality system requirements and a selection should be made as appropriate, e.g. where there is no destructive testing or non-destructive testing, No. 1.8.2 of table 1 does not apply.

3.2 Specification of tasks and responsibilities

Each single activity in table 1 may be associated with a number of tasks and responsibilities such as:

- specification or preparation;
- coordination;
- control;
- inspection, checking or witnessing.

Where welding coordination is carried out by a number of persons, tasks and responsibilities shall be allocated for each person.

The manufacturer shall nominate at least one authorized welding coordinator.

Welding coordination is considered to be the responsibility of the manufacturing organization.

For some work activities the coordination tasks and responsibilities may be carried out by subcontractors. Subcontracted activities shall remain subject to welding coordination in accordance with this International Standard.

Table 1 — Welding related activities to be considered when appropriate

No.	Activities
1.1	Contract review <ul style="list-style-type: none"> — Welding capability and associated activities of the manufacturing organization
1.2	Design review <ul style="list-style-type: none"> — Relevant welding standards — Joint location with relation to the design requirements — Access for welding, inspection and testing — Weld joint details — Quality and acceptance requirements for welds
1.3	Materials
1.3.1	Parent metal <ul style="list-style-type: none"> — Weldability of the parent metal — Any supplementary requirements in the material purchasing specifications including the type of material certificate — Identification, storage and handling of parent metal — Traceability
1.3.2	Consumables <ul style="list-style-type: none"> — Compatibility — Delivery conditions — Any supplementary requirements in consumable purchasing specifications including the type of consumables certificate — Identification, storage and handling of consumables
1.4	Subcontracting <ul style="list-style-type: none"> — Suitability of any subcontractor

Table 1 (continued)

No.	Activities
1.5	<p>Production planning</p> <ul style="list-style-type: none"> — Suitability of welding procedure specification (WPS) and approvals (WPAR) — Work instruction — Welding jigs and fixtures — Suitability and validity of welder approvals — Welding and assembly sequences for the structure — Production weld test requirements — Welding inspection requirements — Environmental conditions — Health and safety
1.6	<p>Equipment</p> <ul style="list-style-type: none"> — Suitability of welding and associated equipment — Auxiliaries and equipment supply, identification and handling — Health and safety
1.7	<p>Welding operations</p>
1.7.1	<p>Preliminary activities</p> <ul style="list-style-type: none"> — Issue of work instruction — Joint preparation, fit-up and cleaning — Preparation of production weld tests — Suitability of the work area including the environment
1.7.2	<p>Welding</p> <ul style="list-style-type: none"> — Assignment and instruction of welders — Use or function of equipment and accessories — Welding consumables and auxiliaries — Application of tack welding — Application of welding process parameters — Application of any intermediate testing — Application and method of preheating and post weld heat treatment — Welding sequence — Post weld treatment

Table 1 (concluded)

No.	Activities
1.8	Testing
1.8.1	Visual examination <ul style="list-style-type: none"> — Completeness of welding — Weld dimensions — Shape, dimensions and tolerance of the welded components — Joint appearance
1.8.2	Destructive and non-destructive testing <ul style="list-style-type: none"> — Application of destructive and non-destructive testing — Special tests
1.9	Weld acceptance <ul style="list-style-type: none"> — Assessment of inspection and test results — Weld repairs — Re-assessment of repaired welds — Corrective action
1.10	Documentation <ul style="list-style-type: none"> — Preparation and maintenance of the necessary records (including subcontracted activities)

4 Job specification

4.1 General

A job specification for the welding coordination personnel when required, e.g. by contracting parties or an application standard, shall include the tasks and responsibilities.

4.2 Tasks

Identification of the assigned tasks, see 3.2.

4.3 Responsibilities

Identification of the assigned responsibilities:

- position in the manufacturing organization and responsibilities;
- the extent of authorization to accept by signing on behalf of the manufacturing organization for e.g. procedure specification, supervision reports, as needed in order to fulfil the assigned tasks;
- the extent of authorization to carry out the assigned tasks.

5 Technical knowledge

5.1 General for all welding coordination personnel

For all tasks assigned, welding coordination personnel shall be able to demonstrate adequate technical knowledge to enable such tasks to be performed satisfactorily.

The following factors should be considered:

- general technical knowledge;
- specialized technical knowledge relevant to the assigned tasks. This may be attained by a combination of theoretical knowledge, training and/or experience.

The extent of required manufacturing experience, education and technical knowledge should be decided by the manufacturing organization and will depend on the assigned tasks and responsibilities.

5.2 Authorized welding coordination personnel

5.2.1 General

Authorized welding coordination personnel (see 3.2) should normally be allocated from one of the following groups. This will depend on the nature and/or complexity of the production. Adequate manufacturing experience need not necessarily be longer than 3 years.

5.2.2 Comprehensive technical knowledge

Welding coordination personnel with full technical knowledge according to 5.1 for planning, executing, supervising and testing of all tasks and responsibilities in welding fabrication (see annex A).

5.2.3 Specific technical knowledge

Welding coordination personnel where technical knowledge is sufficient for planning, executing, supervising and testing of the tasks and responsibilities in welding fabrication within a selective or limited technical field (see annex A).

5.2.4 Basic technical knowledge

Welding coordination personnel where technical knowledge is sufficient for planning, executing, supervising and testing of the tasks and responsibilities within a limited technical field involving only simple welded constructions (see annex A).