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1 Scope

This Linde Standard (LS) is addressed to Linde's personnel and / or subcontracted personnel and describes a system for the identification traceability of piping material on construction sites.

This LS shall insure that at Linde's material responsibility during the piping assembly on construction sites and pre-fabrication places

- material according to specification is used and
- the correlation of inspection document to parts subject to documentation is ensured.

2 Normative references

This LS contains undated references to incorporate provisions of other publications. The normative references are cited at the respective place in the text and the publications are listed below. Issues valid at the effective date of contract shall apply.

2014/68/EU Pressure Equipment Directive (PED)
EN 10204 Metallic products – inspection documents

3 Terms, abbreviations and definitions

Linde	Linde AG - Engineering Division
Inspection document	Declaration of compliance of the order; test reports; inspection certificates (acc. to Table A.1 of EN 10204)
Deviation	Is used in this document as a generic term for a non-fulfilment of a requirement with regard to piping material
NB	Notified Body according to Article 24 of the Pressure Equipment Directive (PED) 2014/68/EU
P.O.	Purchase Order
TPS	Technical Purchase Specification
OS&D	Overage Shortage & Damage

4 Applicable documents

All documents referring to

- Purchase order
- Material receipt
- Material receiving control
- Storage
- Material issue
- Processing

Project-specific regulations / specifications shall govern.

5 Linde ident number

A Linde ident number is allocated to each piping part; this unique ident number defines among others part type, material, dimension. The applicable ident number is shown on the purchase order, in the parts list and package list, on inspection document and on other project documents.

All piping parts are delivered with an ident number, the marking is done according to TPS. This ident number marking is carried out by the material supplier in addition to the marking according to the applicable standard and / or specification.

For the construction documentation such as parts lists, material lists, inspection documents, inspection document etc., the ident number is always the reference number.

6 Material receipt, material receiving control

Material receipt and material receiving control on site shall always be carried out on the basis of

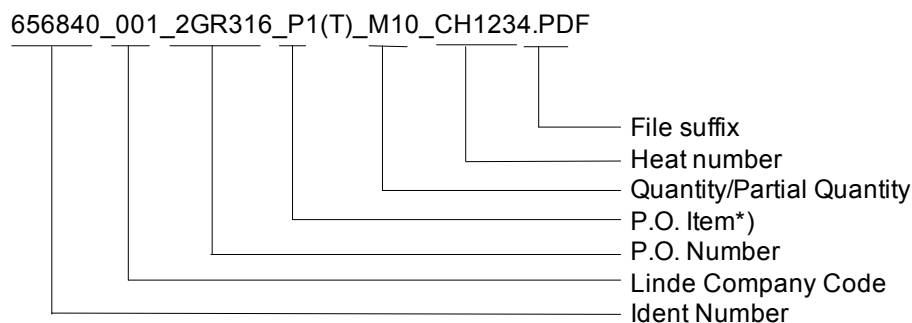
- Purchase Order
- Technical Purchase Specification
- Part Standard and / or Technical Specification
- Package list (with heat no. for parts with inspection document). the package list is attached to the delivery.

The delivered piping material will be checked during material receiving control with respect to marking on the component (mainly: Ident Number, material and heat No. for parts with inspection document); this marking will be transferred to the material receiving documents (package list or material receiving control report, EDP-system) resp. missing data added.

7 Review of the inspection document

The required inspection documents shall be specified by Linde in the TPS or in the Purchase Order. The procurement of the inspection documents, their review and release indication is centrally carried out by Linde / Certification Control Department. There the inspection documents are administered electronically.

For the identification of an inspection document the following systematic shall be observed:



Note: "T" will be added only if concession report exists
The file suffix is always PDF

The following sections shall have a prefix:

- Purchase item: P
- Quantity: M
- Heat: CH (charge, batch)

The section "P.O. Item" shall have the suffix "T" if a Linde approved Concession Report exists (see section 9).

The Concession Report is attached to the electronic inspection documents.

The released and electronically stored inspection documents are made available in a special drive. As a rule, the construction site has an access to this drive. In all other cases, the inspection documents are stored on a CD-ROM and sent to the construction sites in periodical intervals (e.g. fortnightly). The CD-ROM shall always contain the total volume of the inspection documents released until that time.

For piping material procured at the construction site, the inspection documents shall be sent to Linde (certification control department) for review and archiving.

8 Correlation Check: inspection document / component

The correlation of the inspection documents to the supplied component is made by comparing the heat number on the material receiving documents (see section 6) with that on the inspection documents (see section 7).

Deviations are handled as described in section 10.

9 Substitute materials

Other materials than specified may only be used if a concession request had been approved in writing by the responsible (specifying) department for each individual case.

The original ident number of the part is kept and an "X" is added to the ident number in the documents and marked on the part.

10 Deviations

10.1 Deviations found during material receiving control or correlation check

At missing or not assignable marking (example: heat no. on the component is not identical with the entry in the package list or on the INSPECTION DOCUMENT) Linde's Certification Control / Expediting Department shall be informed for an immediate clarification.

The Site Manager shall take the decision on the further proceeding in agreement with the Site QA/QC-Manager. The parts will be kept ON HOLD until the decision is made (see section 11).

At a non-clarified deviation resulting in a keeping ON HOLD of components, the Warehouse-Manager in agreement with the Site QA/QC-Manager shall prepare an OS&D report. The OS&D report is sent to Linde's Certification Control / Expediting Department for further processing.

10.2 Deviations found during certification control

The content review of the inspection documents is performed at Linde's Certification Control Department.

At deviations (example: material on the inspection document is not identical with that in the purchase order), a written claim is sent to the supplier. The inspection document concerned is not released. Until clarification, the parts on the construction site are kept ON HOLD (see section 11).

11 Release

11.1 Release of checked material

Checked and acceptable material or material accepted according to an approved concession request is released for use. The release shall be documented on the material receiving papers and/or in the EDP-system.

Not released or rejected material shall be stored separately and marked as kept ON HOLD.

11.2 Preliminary release of material (Risk Release)

In single cases, e.g. if required by construction or schedule, limited quantities of material can be released for construction, although the inspection documents are not yet available, provided that the following requirements are met:

- The release is to be advised in writing, stating the concerned quantities, by the Site Manager upon agreement with the Site QA/QC-Manager.
- The release is limited to absolutely required quantities.
- The material subject to release had been inspected according to section 6 and had been provisionally accepted.
- The release shall apply to the following material groups only:
- Unalloyed carbon steels (incl. fine grain steels and 0.5% Mo steels) with a minimum yield strength of $R_{eH} \leq 355 \text{ N/mm}^2$
- Austenitic 18/10 CrNi-Steels with max. 3% Mo
- Aluminium Alloys

- In case of a required site heat treatment with not yet available inspection document, the heat treatment shall be postponed until availability of the inspection document.
- In case of piping, which requires authority inspection, the risk release shall be agreed upon with the Notified Body.
- The location for installation of the released parts shall be documented in the isometric supplement sheet, in order to ensure reliable traceability for each part.
- The Site QA/QC-Manager shall follow up with special emphasis the supply and control of the outstanding inspection documents by involving Linde's certification control department. Moreover, it shall be ensured that the subsequent correlation check according to section 8 is performed and documented.

12 Transfer of marking

Prior to cutting of pipes the marking shall be transferred by means of a die stamp or engraving by persons authorized in writing by the construction contractor (manufacturer).

Steel piping with wall thicknesses ≥ 5 mm shall be hard stamped (low stress hard stamps to be used), wall thicknesses < 5 mm as well as all non-ferritic materials (e. g. austenitic CrNi-steel, aluminium) shall be marked by engraving. With approval of Linde a chloride free pen can be used.

Note: For the heat no. a letter (A, B, C, etc.) can be allocated as "batch identification". The allocated batch identification each will be recorded (list) per ident number with the associated heat number and transmitted to the customer with the final documentation.

12.1 Piping within the scope of the Pressure Equipment Directive

- a) For the following cases the transfer of marking (Linde ident number and heat no.) will be performed by the construction contractor in presence of or with the written approval by the Notified Body:
- for pipes with 3.2 inspection document acc. to EN 10204,
 - for pipes, which will be installed in lines of the category II and III according to PED

The Ident Number and Heat No. and/or Batch Identification of the piping parts are transferred to the Isometric Supplement Sheet (see Table 1).

- b) For all pipes, which will be installed in lines of the category 0 (Linde-internal definition for piping acc. to Article 4.(1) of the PED and / or with pressures $PS \leq 0.5$ bar) and category I acc. to the PED, as a minimum the ident number will be transferred to the component prior to cutting the pipes (see Table 1).

Table 1: Transfer of marking

Category	Re-stamping on the component	with NB	Entry in the isometric supplement sheet
Pipes with 3.2 inspection document acc. to EN 10204	Linde ident number and heat no. and / or batch marking	X ¹⁾	Linde ident number and heat no. or batch marking
Pipes acc. to cat. II and III			
Pipes acc. to cat. 0 and I	Linde Ident Number	-	-
¹⁾ With the written approval of the Notified Body the construction contractor can perform the re-stamping on his own.			

12.2 Piping acc. to other codes

The transfer of marking is performed acc. to the specified code. As a minimum, the Linde ident number on the component shall always be transferred (as e.g. acc. to ASME).

13 Documentation

The extent of documentation and the forms to be used are determined in project-specific documents.

13.1 Documents relating to piping material

For all piping parts the following documents are collected and archived.

- Package lists (as material receiving record) and/or material receiving control report, sorted acc. to part type, (material), Ident Number
- OS&D reports
- List of the allocated batch markings with associated heat numbers

inspection documents are centrally stored electronically at Linde acc. to project number and ident number. after receipt and release of all inspection documents one or more CD-ROMs (summarized structured version) shall be sent by the Certification Control Department to the construction site for transmitting to the customer together with the final documentation of the construction work.

13.2 Inspection documents for welding filler materials

Inspection documents for welding filler materials are reviewed and collected by the construction contractor and form an integral part of the final documentation of the construction work.

14 Keeping of the marking on the component

The marking on the component described in section 12 shall remain existing until the mechanical completion of the plant (final acceptance of the piping).

Exception: In case of an intermediate inspection of the piping (e.g. during pre-fabrication) where the marking on the component is checked and confirmed by the responsible inspectors against the entry in the Isometric Supplement Sheet, it is not required to furthermore keep the marking on the component.