

General Piping Material Purchase Specification

4WPI-M00001

Revision 3
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RESPONSIBLE GROUP: Mechanical Systems Engineering

Denotes Revision

1. PURPOSE

- 1.1 This global engineering specification defines Air Products' minimum requirements for standard piping materials.

2. SCOPE

- 2.1 This specification applies to all piping materials used on worldwide projects.
- 2.2 The individual, specific material purchase specifications attached to the purchase order provide the detailed requirements for the items listed on the requisition sheets. This document shall be read and applied in conjunction with these specifications.

3. RELATED DOCUMENTS

3.1 European Committee for Standardization (CEN)

EN 10204 Metallic products - Types of inspection documents

Note: A European standard is adopted as a national standard in each country of the European Union, and as such is published preceded by their standards institution's identification letters (e.g., BS, DIN, etc.).

3.2 European Council/Commission Legislative Documents (EC)

97/23/EC Directive of the European Parliament and of the Council on the Approximation of the Laws of the Member States Concerning Pressure Equipment

4. GENERAL

- 4.1 The use of standards other than those stated is not permitted without the prior written approval of Air Products.
- 4.2 Unless otherwise stated in the purchase order documentation, the standard or specification referred to shall be the latest issue as of the date of award of the purchase order.
- 4.3 Applications for waivers to the requirements shown in these specifications, or to supply alternative items (other than those listed), shall be made in writing to the Air Products Purchasing Manager, who will request approval and written authorization from the relevant Air Products manager. Written approval shall be received before fabrication and supply.
- 4.4 If the supplier has any questions regarding the requirements contained in this and the applicable specifications and standards, clarification shall be requested in writing from Air Products.

Authorization for this document is on file in the GEO Standards Department.

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5. QUALITY ASSURANCE

- 5.1 Despite all that is specified, the supplier or manufacturer shall remain responsible for the manufacturing procedures, and for the suitability of the items as ordered for their intended use as defined by the relevant material and dimensional standards.
- 5.2 Every material or component shall meet all the requirements of the applicable material purchase specification.
- 5.3 When inspection and/or witnessing of tests are specified, **all of the following** shall be met:
- 5.3.1 The supplier or their representative shall advise the Air Products person designated in the purchase order, in due time, but not less than five days in advance of the availability of an item in order to agree on inspection, to witness testing, or to waive inspection or witnessing.
- 5.3.2 Air Products reserves the right to witness any required inspection and testing.
- 5.3.3 Air Products reserves the right to perform or require the supplier to perform additional testing. The testing methods and procedures will be restricted to those mentioned in these specifications. If such testing is performed to investigate a suspected defect, and the defect is confirmed, then the testing cost shall be to the supplier's account; otherwise, the cost shall be to Air Products' account.
- 5.3.4 If a defect is detected, the supplier and Air Products shall mutually agree on any additional inspection and on implementing methods or procedures to prevent the recurrence of those defects. The cost of any additional inspection and revised procedures shall be borne by the supplier.
- 5.3.5 In no case shall any action of Air Products or their representatives relieve the supplier of responsibility to provide a quality finished item.
- 5.3.6 Air Products representatives shall have free access to all parts of the supplier's works that concern the manufacture and testing at all times during the contract's execution.
- 5.3.7 The supplier shall provide Air Products representatives with all reasonable facilities necessary for determining compliance with these specifications.
- 5.3.8 Whenever an item does not meet the minimum requirements, it is subject to rejection without reservation. The burden of proof to the contrary lies solely with the supplier.
- 5.3.9 The supplier shall remove from lots to be presented for inspection, all items not meeting the requirements of these specifications. Repeated occurrence of Air Products having to reject items shall be sufficient cause for refusal to accept for final inspection all items until correction has taken place. When items are presented for inspection, all required certificates and other relevant documents shall be available for the Air Products representative to evaluate and scrutinize.
- 5.3.10 Air Products' representative will, after acceptance of the material, issue release notes that release the material for shipment to its destination.

6. COUNTRY OF ORIGIN

- 6.1 Material certification shall meet **all necessary statutory/code requirements of the country of use**. Unless permitted otherwise by the applicable statutes/codes in the country of use, the minimum certification requirement for primary pressure-containing parts and attachments, structural steelwork (excluding bolting), and lifting lugs, shall be either mill certificates (for metallic material originating in the USA) or a 3.1 certificate according to EN 10204. The name and position of the person attesting the results on material certification must be included on the test certificate. Materials defined above shall originate from a 'qualified' country except as defined in paragraph 6.1.1. Countries of origin currently 'qualified' by Air Products are the United States of America, Canada, Mexico, Japan, South Korea, Taiwan, South Africa, or the European Economic

Area (including the EU Member States, the European Economic Association and Associated Countries, **but not the EU Candidate Countries** or any of the following: Slovenia, Slovakia, Portugal, Malta, Lithuania, Latvia, Estonia, and Cyprus).

- 6.1.1 The use of materials from manufacturers in 'un-qualified' countries requires review and approval from the Air Products regional design manager of the specifying organization. In such cases, details of the materials and proposed suppliers shall be communicated to Air Products to be verified acceptable prior to submitting any quotation to Air Products.
- 6.1.2 For pressure equipment supplied CE marked under the European Union Pressure Equipment Directive, the CE mark and Declaration of Conformity is deemed evidence that its material certification satisfies the requirements of paragraph 6.1. Hence, for some applications EN 10204 2.1 and 2.2 certificates are permitted and material certificates for the equipment's component parts are not required by Air Products unless specifically requested. The country of origin restrictions imposed by paragraph 6.1 still apply to CE marked equipment.
- 6.1.3 The country of origin of all items (finished product) shall be traceable from the certification and/or marking.

7. MARKING

- 7.1 All metal plate, pipe, fittings, and flanges DN50 [NPS 2 (nominal pipe size 2)] and larger shall, as a minimum, have the heat identification and material standard permanently and clearly marked by soft (low stress) stamping or etching. For stainless steel and non-ferrous materials, indelible ink stamping is an acceptable form of marking. All other items, pipe, fittings, and flanges smaller than DN50 (NPS 2) shall be similarly marked on the item or on a weather-resistant, waterproof label permanently attached to the item or its packaging. Also for all items, unless otherwise agreed between Air Products and the supplier, the Air Products commodity code shall be similarly marked. The supplier shall also comply with any further requirements which are stated in the purchase order.

8. CERTIFICATION

- 8.1 Certification for all materials for pressure-containing components shall be provided. Material certification shall meet all necessary statutory/code requirements. One set shall be kept and shipped with the item(s) and a second identical, electronic (CD or e-mail) set shall be submitted to the Air Products requisitioner who shall keep it for reference or for supplementing the site copy or, if the mechanical contractor does not return the certificates in the final production dossier, for issue to Engineering Data Control Department for record purposes.
- 8.2 The certification shall be as stated on the material purchase specifications. Where referred to as a "mill certificate or inspection certificate Type 3.1 to EN 10204," the certificate shall be a Certified Test Report. This certification shall include the results of mechanical tests, and a full chemical analysis that shall refer to the cast or heat identification of the component. For aluminum materials, standard United States industry practice to determine the chemical composition of the ingot prior to further processing is acceptable.
- 8.3 All material shall be identified on the certificates with the following information. Certification not clearly identified in this manner will be returned to the supplier and payment withheld accordingly.

Air Products purchase order number
 Air Products purchase order item number
 Air Products commodity code
 Heat number
 Brief item description

9. PED

9.1 Where specified on the purchase order or material purchase specification as components for pressure equipment according to the European Pressure Equipment Directive (PED) 97/23/EC, the materials shall meet all the requirements of the PED for certification, welding and non-destructive examination (NDE). The requirements are detailed on the material purchase specification.

9.2 The certification shall include a copy of the original material manufacturer's inspection certificate or report. A certificate from the stockist or handler alone is not permissible.