

**General Piping Material Purchase Specification**

**4WPI-M00001**

Revision 5  
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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 Air Products Engineering Documents**

4WGN-20002 Material Requirements

**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 Air Products has restrictions on the source of materials based on past experience of vendors. These restrictions are defined in Air Products specification Material Requirements which applies to all materials including piping materials. The requirements in 4WGN-20002, including its appendix, shall apply whenever this specification is used.

## 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. Certification shall be in accordance with the requirements in 4WGN-20002.

## 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.