

**Ministry of Defence
Defence Procurement Agency, ADRP2
Abbey Wood
Bristol
BS34 8JH**

OBSOLESCENCE NOTICE

All DTD specifications were declared obsolescent from 1st April 1999. All DTD 900 series approvals also lapsed at that time. The standards will no longer be updated but will be retained as obsolescent documents to provide for the servicing of existing equipment.

Further Guidance

The aim in declaring the specifications obsolescent is to recognise that the documents are not being updated and thus should be used with care by both purchaser and supplier. For example, a specification could contain valid technical information but may also contain type approval clauses that contradict procurement policy and/or use materials that do not comply with environmental legislation. The obsolescent specification can still be used as a basis for a purchase provided that the supplier and purchaser agree suitable changes to the specification within the purchase order/contract.

For the DTD 900 system, each specification has provided an MoD approved material and process. For these items, the declaration of obsolescence will constitute the termination of both the extant MoD approval and the continuing MoD assessment that had underpinned those approvals. Again, the technical content of the document remains valid and can be used by both purchaser and supplier as a basis for a contract but an acceptable (to the parties) approval/assessment procedure would be required.

Aerospace Materials Specification

PIGMENTED VARNISH JOINTING COMPOUND

SECTION 5

Jointing Compound Requirements

Requirement	Method
Para 5.2 'delete' 4.5 ± 0.5	'delete' RTV Brookfield Viscometer Spindle 6, 25 rpm 25°C.
'insert' $\pm 10\%$ of Approved sample	'insert' 'By method agreed between the Approving Authority and manufacturer'

After para 5.2.5

Insert Note 1

Material covered by this specification can be supplied in a wide range of viscosities. The viscosity level required shall be specified and agreed between the manufacturer and customer.

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Aerospace Materials Specification
PIGMENTED VARNISH JOINTING COMPOUND

Note 1. This specification is one of a series issued by the Procurement Executive, Ministry of Defence, either to meet a limited requirement not covered by an existing British Standard (Aerospace Series) or to serve as a basis for inspection of material, the properties and uses of which are not sufficiently established to warrant submission to the British Standards Institution for standardisation.

Note 2. The use of this specification will be reviewed periodically. Whenever possible it will be offered to BSI for issue as a British Standard (Aerospace) or to AECMA as the basis of a European Standard (Aerospace series).

Note 3. The tests employed in this specification are chosen for their reproducibility and ability to control the properties of the material. They are not intended to be simulated service tests which, because of variability of test conditions, may be unsatisfactory for control purposes.

Note 4. This specification calls for the use of substances and/or test procedures that may be injurious to health if adequate precautions are not taken. It refers only to technical suitability and in no way absolves either the supplier or the user from statutory obligations related to health and safety at any stage of manufacture or use.

This specification has been devised for the use of the Ministry of Defence and its contractors in the execution of contracts for the Ministry and, subject to the Unfair Contract Terms Act 1977, the Ministry will not be liable in any way whatever (including but without limitation negligence on the part of the Ministry, its Servants or agents) where the specification is used for other purposes.

Note 5. Information on the status and currency of this specification can be obtained from Specifications Section, Materials & Structures Department, Royal Aircraft Establishment, Farnborough, Hants.

SECTION 1

Scope

This specification defines the requirements for an anti-corrosive pigmented jointing compound for use in aerospace assemblies.

SECTION 2

Related Documents

BS410	Specification for test sieves
BS1795	Specification for extenders for paints
BS3900	Methods of tests for paints
ISO 787	General methods of test for pigments and extenders
ISO 2068	Barium Chromate pigments for paints

SECTION 3

Composition

- 3.1 The materials shall consist of an oil varnish medium, pigmented with 50/50 m/m mixture of barium chromate and china clay (hydrated aluminium silicate).

SECTION 4

Component Requirements

4.1 China Clay

BS 1795 Extender No. 7

4.2 Barium Chromate

	<i>Test</i>	<i>Requirement</i>	<i>Method</i>
4.2.1	Barium Chromate min % (BaO 58.1%)	96.0	ISO 2068
4.2.2	Coarse Particles (BS410 63 μ) max % m/m	0.3	ISO 787/7
4.2.3	Volatile Matter max % m/m	1.0	ISO 787/2
4.2.4	Water Soluble Ions max % m/m	0.5	ISO 787/8
	Chloride (as Cl) max %	0.02)	ISO 787/13
	Sulphate (as SO ₄) max %	0.02)	

SECTION 5

Jointing Compound Requirements

5.1 Condition

The material shall be free of lumps and grit and shall give a uniform film when applied to a smooth flat surface.

5.2 Tests

	<i>Test</i>	<i>Requirement</i>	<i>Method</i>
5.2.1	Viscosity Pa secs	4.5 \pm 0.5	RVT Brookfield Viscometer Spindle 6, 25 RPM 25°C
5.2.2	Drying Rate hrs min	\leq 5	BS 3900 C2
5.2.3	Toughness and Adhesion	No detachment or damage shall occur	Appendix 1
5.2.4	Protection against Artificial Sea-water	No flaking, blistering or corrosion shall occur	Appendix 2
5.2.5	Water Absorption max % m/m	3.5	Appendix 3

5.3 Keeping Quality

The keeping quality of the material shall be such that when stored in its original sealed container, the material shall retain all the properties described in this specification for not less than 2 years in either tropical or temperate climates from the date of despatch from the manufacturer.

SECTION 6

Type Approval

- 6.1 Before any particular manufacturers material is accepted as qualifying with this specification, the manufacturer shall obtain Type and Qualification Approval.

Applications for Type and Qualification Approval shall be submitted to the Director of Quality Assurance, Technical Support, (DQA/TS Royal Arsenal East, Woolwich, London SE18 6TD) accompanied by:

- i. Evidence that the materials comply with Sections 4 and 5.
 - ii. Details of composition to be supplied in confidence to DQA/TS.
- 6.2 Any proposed changes by the manufacturer in the formulation shall be notified to the Approving Authority. If significant the material shall be designated a new product which will need separate approval.

SECTION 7

Quality Assurance

A representative sample of each batch of material shall be tested by the manufacturer and proved to comply with Section 5, paragraphs 5.2.1 to 5.2.5 inclusive.

SECTION 8

Containers and Marking of Containers

8.1 Containers

The material shall be filed into sound, clean and dry containers suitable for the product. Trade pattern containers will be accepted unless otherwise specified in the contract.

8.2 Marking of Containers

It is the manufacturers responsibility to mark containers in accordance with any legal requirements, in addition, the containers shall each be legally and durably marked with the following details.

Designation of the material as shown in the title of this specification.

Specification No.

Distinctive Batch No.

Date of despatch by the manufacturer to the customer

Contractor's initials or recognised trade mark.

APPENDIX 1

Method for Touchness and Adhesion

A 150 mm x 100 mm burnished tin-plate panel prepared in accordance with BS 3900 A3 shall be coated with the jointing compound to give a film weight of 75 ± 5 g/m². The treated panel shall be submitted for a period of 14 days to daily stoving for 6 hours at $70 \pm 2^\circ\text{C}$ and immersion in sea-water for the remainder of the time.

It shall then be subjected to a bend test in accordance with BS 3900 E1, at 0°C using a 6 mm mandrel.

APPENDIX 2

Method for the Determination of Protection against Artificial Sea-water

- a. A 150 mm tared burnished steel panel, prepared in accordance with BS 3900 A3, shall be coated with the compound to give a film weight of $75 \pm 5 \text{ g/m}^2$ and allowed to dry at 50°C for 8 hours. The back of the panel shall be protected with the material under test or with any other protective which will not be affected by the drying conditions given above or affect the test solution. The edges shall be protected by dipping for 6 mm in a melted wax.
- b. The coated steel panels shall be partially immersed in artificial sea water complying with BS 3900 F4 Clause 6.1 at a temperature of $23 \pm 2^\circ\text{C}$ continuously for 3 days, immediately after which time the panel shall be removed and examined visually. A strip of coating shall then be removed from the face of the panel by a suitable paint remover so that a representative section of the panel is exposed and the substrate shall be examined for signs of corrosion.

APPENDIX 3

Method for the Determination of Water Absorption

- a. A 150 mm x 100 mm burnished tin plate panel prepared in accordance with BS 3900 A3 shall be weighed (W_1) prior to coating on one side with the jointing compound to give a film weight $75 \pm 5 \text{ g/m}^2$ and then allowed to dry at 50°C for 8 hours; and weighed again (W_2). The panel is then totally immersed in artificial sea-water complying with BS 3900 F4 Clause 6.1 at $23 \pm 2^\circ\text{C}$ for 24 hours, after which it is dried by light dabbing with a filter paper and immediately re-weighed.

$$\text{Water Absorption \%} = \frac{W_3 - W_2}{W_2 - W_1} \times 100$$



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