



COATING, ALUMINUM, WATER SHEDDING, HYDROPHILIC

WSS-M18P17-A

1. SCOPE

The coating defined by this specification, typically a resin-bonded silicate, imparts a durable, hydrophilic surface on aluminum heat exchangers to facilitate water shedding, with specified level of resistance to bacterial and fungus growth.

2. APPLICATION

This specification was originally released for evaporator core surfaces in automotive air-conditioning systems.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.4 PREPARATION OF TEST PANELS

The coating under test is to be the same composition and concentration as intended to be used in the manufacturing process and be maintained at 28 - 30 °C.

Use aluminum alloy 3105 test panels available from any commercial test panel supplier. Panel size to be approximately 300 x 100 x 0.6 mm.

Preclean panels with neutral surfactant type cleaner at room temperature.

Clean panels with slightly acidic or alkaline etching cleaner at 50 +/- 2 °C.

Rinse by dipping in tap water for 5 - 10 seconds.

Rinse by dipping in DI water for 5 - 10 seconds.

Allow water to drain for 5 - 10 seconds.

Coat panels by immersion for 2 - 3 minutes in the coating.

Allow panels to drain for 5 - 10 seconds.

Dry panels by hanging them vertically, in an air-circulating oven at 380 - 420 °C for 4 minutes +/- 15 seconds.

Date	Action	Revisions
2007 08 30	Revised	Inserted 3.0; Deleted 3.1, 3.2, 3.3, 3.11 & 4
1999 02 12	Activated	



Documents

Document Sharing Hub

**3.5** Contact Angle, max
(Goniometer test)

24 h air dry 15°

72 h water wash 35°
(ASTM D 870 except air dry panel
for 2 - 3 h)**3.6** Odor Rating, max
(SAE J 1351)

2

3.7 FOGGING(SAE J1756, 3 h at 100 °C heating, 21 °C cooling
plate, post test conditioning 1 h)

Fog Number, min 70

Formation of clear film, droplets or crystals is cause for rejection.

3.8 BIOCIDES PERFORMANCE

Must pass

(Latest test method to be provided
by the Product Engineering contact)**3.9 CHEMICAL/COMPOSITIONAL DATA**Supplier shall furnish chemical/compositional data and process control plan as mutually agreed
and/or as required by para 3.11.**3.10 ADDITIONAL REQUIREMENTS**Specific requirements for material and/or manufactured parts shall be specified on the
Engineering drawing, Engineering parts specification and/or performance specification. All
critical areas with respect to these properties shall be clearly designated on the engineering
drawing.Candidate materials shall successfully complete the following testing prior to approval to this
specification.**3.10.1 Production Shop Trial****3.10.2 Component/Module Life Cycle Testing**
(As specified by the responsible design activity)