

## Aerospace standard SAE AS5272

**Type II:** service temperature range: -68°C/+204°C  
 usage: only for aerospace fastener/threaded applications  
**heat cure at 204°C for max. 60 min.**  
 replaces MIL-L-46010 type II  
 shelf-life: 12 months

Molykote candidate: **3400A AERO**

### General technical requirements:

3,1	no graphite, powdered metal or ozone depleting substances	
3,2	film appearance	visual examination with 12x magnification - no cracks, blisters etc.
3,2	film thickness	8/13 µm. - no single reading < 5 µm. & > 18 µm.
	steel:	curing: 204°C/60 min. ASTM D 1186
3.3.1	film adhesion	ASTM D 2510 Procedure A
3.3.2	resistance to fluids	ASTM D 2510 procedure C
	fluids:	MIL-A-8243 (anti-icing fluid) MIL-C-372 (cleaning compound for bore of small arms & aut. weapons) ASTM D 1193 type III (reagent water) ASTM D 1141 vol.31 (substitute ocean water) MIL-H-46170 (synthetic fire resistant hydraulic fluid) MIL-T-83133 (aviation turbine fuel kerosene JP-8) MIL-PRF-23699 (synthetic turbine oil) VV-D-1078 (damping fluid, silicone based, dimethyl polysiloxane) MIL-L-14107 (lubricating oil, weapons, low temperature) MIL-L-46000 (lubricant semifluid, automatic weapons) MIL-PRF-63460 (lubricant, cleaner, preservative for weapons) MIL-PRF-85336 (lubricant, all weather, automatic weapons) no softening, lifting, blistering, cracking, peeling or loss of adhesion
3.3.3	thermal stability	ASTM D 2511 no flaking, cracking, or peeling & conform to 3.3.1 (film adhesion)
3.3.4	endurance wear life	4 trials average 450 min. with no single test < 390 min. (load: 1000 lbf) ASTM D 2625 Proc. A (Falex Pin & Vee)
3.3.5	load carrying capacity	2 trials average 2000 lbf with no single test < 1750 lbf ASTM D 2625 Proc. B (Falex Pin & Vee)
3.3.8	salt-spray (fog) test	100 hrs. in 5% SST 2 panels; no more than 3 rust spots/panel, none > 1.0 mm. in diameter ASTM B 117 = DIN 50021
3.3.9	solids content	> 40 % by weight of solid material for test description see AS5272 point 4.4.2
3.3.10	storage stability	after a storage of 1 year at 25°C pass point 3.3.4 (endurance life) + 3.3.8 (salt-spray test)

### Quality assurance:

- 4.1.1 responsibility for compliance: product manufacturer is responsible for passing **all** qualification tests
- 4.1.2 quality conformance inspection: each lot shall pass the following tests:
- 1) film thickness (3.2)
  - 2) film adhesion (3.3.1)
  - 3) resistance to fluids (3.5.1)
  - 4) wear life requirements (3.3.4 & 3.3.5)
  - 5) salt spray test (3.3.8)
  - 6) solids content (3.3.9)

inspection conditions: temperature 25 +/- 3 °C, relative humidity between 30/70 %

### Test specimen preparation for Falex test:

ok

ok

done

done  
done  
done  
done  
done  
done  
done  
done  
done

done

done

done

done

done  
done

implemented

degreasing  
grit blasting with Al-oxide  
phosphating with DOD-P-16232 Type M or Z class3 = Hebrobond M 98  
apply AFC by spraying  
film thickness: 8/13  $\mu\text{m}$ . - no single reading < 5  $\mu\text{m}$ . & > 18  $\mu\text{m}$ .  
heat cure at 204°C for 30 min.

**Preparation of and application to steel test panels:**

degreasing  
grit blasting with Al-oxide  
phosphating with DOD-P-16232 Type M or Z class3 = Rostschutzbonder 563A  
apply AFC by spraying  
film thickness: 8/13  $\mu\text{m}$ . - no single reading < 5  $\mu\text{m}$ . & > 18  $\mu\text{m}$ .  
heat cure at 204°C for 30 min.

**Preparation of and application to aluminum test panels:**

degreasing  
apply AFC by spraying  
film thickness: 8/13  $\mu\text{m}$ . - no single reading < 5  $\mu\text{m}$ . & > 18  $\mu\text{m}$ .  
heat cure at 204°C for 30 min.

**Preparation of and application to corrosion resistant steel A 167 test panels:**

degreasing  
grit blasting with Al-oxide  
apply AFC by spraying  
film thickness: 8/13  $\mu\text{m}$ . - no single reading < 5  $\mu\text{m}$ . & > 18  $\mu\text{m}$ .  
heat cure at 204°C for 30 min.