



Nap-Gard® 7-4500

CV Red FBE

Revised: 10 May 2016

DESCRIPTION

Nap-Gard® Product No. 7-4500 is a thermosetting epoxy powder designed for use as a valve coating. In testing, it meets the requirements of UL 262 Gate Valve spec. and FM 1120/1130, 1510 and 1511 spec.

Nap-Gard® 7-4500 has been certified to ANSI/NSF standard 61, drinking water system components.



TYPICAL POWDER PROPERTIES

| | | | |
|--------------------------------|----------------|------------------------------|-----------------------------|
| Color: | Reddish Brown | Theoretical Coverage: | 137 Ft ² /lb/mil |
| Specific Gravity: | 1.40 ± .05 | Density: | 1400 ± 50 g/L |
| | | CSA Z245.20-10 | |
| | | Clause 12.6.2.3 | |
| Typical Gel Time: | 10 ± 2 seconds | Shelf Life*: | 12 months |
| CSA Z245.20 | | @ 25°C (77°F) | |
| @ 205°C (401°F) | | @ 50% RH | |
| Thermal Characteristics | Tg1 | 57 ± 5°C | |
| CSA Z245.20 | Tg2 | 104 ± 6°C | |
| Clause 12.7 | ΔH | 65 ± 10 (J/g) | |

* Transportation: The material is stable during transportation at temperatures below 25°C (77°F) and 50% RH.

TYPICAL PROPERTIES OF APPLIED FILM†

| | | | |
|--------------------------------------|---|---------------------------------|--------------------------------------|
| Recommended Film Thickness | | Minimum | 200 µm (8 mils) |
| | | Average | 300 µm (12 mils) |
| | | Maximum | 750 µm (30 mils) |
| TEST / REQUIREMENT | METHOD | CRITERIA | RESULT |
| Dir/Rev Impact Resistance | ASTM D2794 | 0.032" steel panels @3-5mils | 160/160 in/lbs. |
| Immersion per UL262 (90 days) | Sodium chloride, water, potassium biphthalate, sodium carbonate | No blisters in any solution | Pass |
| Adhesion | CSA Z245.20 Clause 12.14 | 75°C, 24 hours | Pass, Rating1 - 2 |
| Taber Abrasion | ASTM D4060 | C17 wheel, 1 Kg, 1000 Cycles | 40 mg removal |
| Flexibility (Mandrel) | ASTM D522 | 0.032" steel panels @3-5mils | 1/8 in. dia. Mandrel, no fracture |

† Performance depends on film thickness. Consult Nap-Gard® Specialist for specific recommendations.



GENERAL APPLICATION PARAMETERS

- Grit blast to NACE Near-White specifications (Swedish Standard #Sa 2½) and profile between 50 µm (2 mils) and 112 µm (4.5 mils).
- Preheat valve to approximately 135°C (275°F) to 191°C (375°F)
- Apply Nap-Gard® 7-4500 powder to meet recommended thickness specification.
- Follow recommended cure schedule (see below).
- Cure should be verified by DSC or other methods.
- Electrically inspect for holidays. Repair with Nap-Gard® 7-1861 or NSF approved SP-7888.

CURE† SCHEDULE GUIDELINES

The cure profile and schedule for Nap-Gard® Product No. 7-4500 shows the minimum time at temperature required to achieve the typical performance properties of the coating. Because substrate cooling rates vary so widely with its wall thickness, no allowance has been made for heat loss from the substrate but this can be easily measured during the coating process and allowance made.

Recommended powder application temperature range is listed below and post heating may be required. The minimum application temperature (as measured on the metal substrate), and the post heat time may conform to the following cure schedule. Please note 3/8" steel coupon and DSC cure check is used to generate the following cure schedule.

| Application Temperature | Post Heat Temperature and Minimum Time* | Time to Quench |
|-------------------------|---|----------------|
| 135°C (275°F) | 300°F / 15 min | Immediate |
| 149°C (300°F) | 325°F / 9 min | Immediate |
| 163°C (325°F) | 350°F / 7 min | Immediate |
| 177°C (350°F) | 375°F / 6 min | Immediate |
| 191°C (375°F) | 400°F / 5 min | Immediate |

****CAUTION**** Recommended time is based on the assumption that the listed temperature is maintained without any cool down rate. Post heat time will vary with application parameters and substrate sizes. Therefore, the above information shall be used only as a guideline by the applicator to develop proper post heat time. Cure should be verified by DSC or other methods.

Always consult product Safety Data Sheet (SDS) prior to handling.

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