



# Nap-Gard®

## 7-2525

## Elevated Service Temperature FBE

Revised: 7 October 2022

### DESCRIPTION

Nap-Gard® Product No. 7-2525 is a thermosetting epoxy powder designed for use as a corrosion barrier coating for underground pipeline service. It can be used as a primer (8-10 mils) for multilayer (three layer PP and dual powder FBE) system or a single layer FBE. In service, the coating is capable of withstanding continuous operating temperatures of 125°C (257°F).

### TYPICAL POWDER PROPERTIES

|                                |                 |                              |                             |
|--------------------------------|-----------------|------------------------------|-----------------------------|
| <b>Color:</b>                  | Reddish Brown   | <b>Theoretical Coverage:</b> | 139 Ft <sup>2</sup> /lb/mil |
| <b>Specific Gravity:</b>       | 1.38 ± .05      | <b>Density:</b>              | 1380 ± 50 g/L               |
|                                |                 | CSA Z245.20-22               |                             |
| <b>Typical Gel Time:</b>       | <b>7-2525FG</b> | 8 ± 2 seconds                |                             |
| CSA Z245.20-22                 | <b>7-2525</b>   | 15 ± 3 seconds               |                             |
| @ 205°C (401°F)                | <b>7-2525LG</b> | 24 ± 5 seconds               |                             |
|                                | <b>7-2525XG</b> | 34 ± 7 seconds               |                             |
| <b>Shelf Life*:</b>            | 12 months       |                              |                             |
| @ 25°C (77°F) and 50% RH       |                 |                              |                             |
| <b>Thermal Characteristics</b> |                 | <b>7-2525 Series</b>         |                             |
| CSA Z245.20-22                 | T <sub>g1</sub> | 55 ± 7°C                     |                             |
|                                | T <sub>g2</sub> | 130 ± 5°C                    |                             |
|                                | T <sub>g3</sub> | 130 ± 5°C                    |                             |
|                                | ΔH              | 110 ± 20(J/g)                |                             |

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

### TYPICAL PROPERTIES OF APPLIED FILM†

|   |   |                                 |                                  |
|---|---|---------------------------------|----------------------------------|
| <b>Recommended Film Thickness</b>               |   | Average                         | 450µm (18 mils)                  |
|   |   | Minimum                         | 350µm (14 mils)                  |
| <b>Repair Material</b>                          | Nap-Gard 7-1888   |                                 |                                  |
| <b>Wet T<sub>g</sub> (°C)</b><br>(80°C/28 days) | ≥110°C  |                                 |                                  |
| <b>TEST / REQUIREMENT</b>                       | <b>METHOD</b>   | <b>CRITERIA</b>                 | <b>RESULT</b>                    |
| <b>Impact Resistance</b>                        | CSA Z245.20-22  | @-30°C (-22°F) > 1.5 J          | Pass                             |
| <b>Bending</b>                                  | CSA Z245.20-22  | 3.0°/pipe dia. @-30°C           | Pass @ 12-16 mils                |
| <b>Weathering Resistance</b>                    | No film degradation other than surface chalking shall occur within 6 months |                                 |                                  |
| <b>Adhesion</b>                                 | CSA Z245.20-22  | 95°C, 28 days<br>75°C, 24 hours | Rating 1, Pass<br>Rating 1, Pass |
| <b>Cathodic Disbondment</b>                     | CSA Z245.20-22<br>@ 15 - 18mils   | 28 days, 1.5 Vdc, 95 °C         | 7.0 mm radius from edge          |

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

### TYPICAL ELECTRICAL PROPERTIES OF FILM

| <u>TEST / REQUIREMENT</u> | <u>METHOD</u> | <u>CRITERIA</u> | <u>RESULT</u> |
|---------------------------|---------------|-----------------|---------------|
| Dielectric Strength       | ASTM D149     |                 | To be tested  |
| Dielectric Constant       | ASTM D150     |                 | To be tested  |
| Breakdown Voltage         | ASTM D149     |                 | To be tested  |
| Volume Resistivity        | ASTM D257     |                 | To be tested  |

### CURE† SCHEDULE GUIDELINES

The cure profile and schedule for Nap-Gard® Product No. 7-2525 shows the minimum time at temperature required to achieve the typical performance properties of the coating. Because pipe cooling rates vary so widely with pipe wall thickness, no allowance has been made for heat loss from the pipe but this can be easily measured on the coating line and allowance made. Care should be taken to avoid exceeding the maximum time due to the potential loss of certain properties such as flexibility and impact. For detailed application guide, please contact Nap-Gard specialist.

Recommended powder application temperature range is listed below and post heating is not a normal requirement. The minimum post application curing temperature (as measured on the coated pipe), and the time to quench may conform to the following cure schedule:

| <u>7-2525FG</u>                |                            | <u>7-2525</u>                  |                             |
|--------------------------------|----------------------------|--------------------------------|-----------------------------|
| <u>Application Temperature</u> | <u>Min Time to Quench†</u> | <u>Application Temperature</u> | <u>Min. Time to Quench†</u> |
| 218°C (425°F)                  | 120 seconds                | 218°C (425°F)                  | 210 seconds                 |
| 232°C (450°F)                  | 90 seconds                 | 232°C (450°F)                  | 150 seconds                 |
| 239°C (463°F)                  | 60 seconds                 | 239°C (463°F)                  | 90 seconds                  |

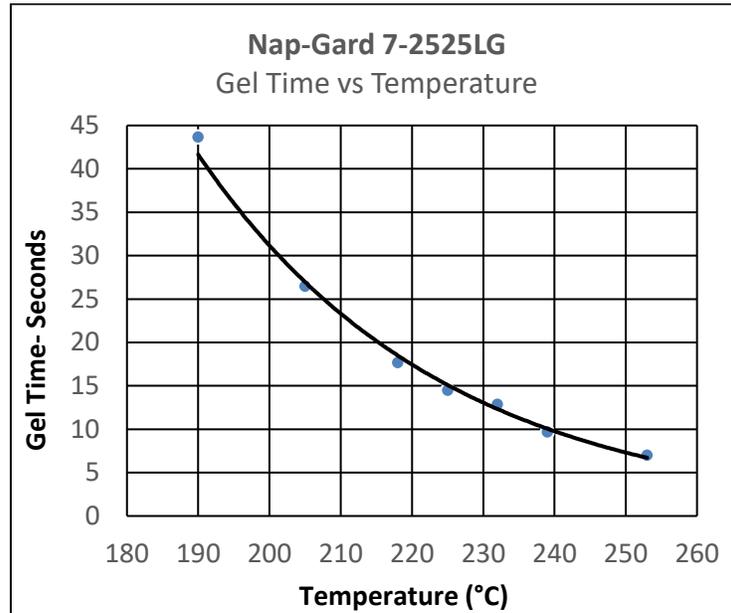
| <u>7-2525LG</u>                |                            | <u>7-2525XG</u>                |                             |
|--------------------------------|----------------------------|--------------------------------|-----------------------------|
| <u>Application Temperature</u> | <u>Min Time to Quench†</u> | <u>Application Temperature</u> | <u>Min. Time to Quench†</u> |
| 218°C (425°F)                  | 270 seconds                | 218°C (425°F)                  | 300 seconds                 |
| 232°C (450°F)                  | 240 seconds                | 232°C (450°F)                  | 270 seconds                 |
| 239°C (463°F)                  | 180 seconds                | 239°C (463°F)                  | 210 seconds                 |

† Cure is by residual heat in the pipe, therefore very light wall pipe may require additional post heat to complete cure.

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

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

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