

# Captrad GRP Phenolic Gratings

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# Captrad Phenolic Gratings

## ■ Captrad Phenolic Resins

Phenolic Resin is classified as a condensation reaction polymer. In this type of reaction, the polymer grows by combining two large molecules and releasing a third small molecule, usually water. Depending on the product formulation, either a novolac or a resole resin is produced. Novolacs are designed to incorporate a curing agent, such as hexmethylenetetramine, and are referred to as two-stage, which employs an acid catalyst. Resoles require no curing agent and because of the one component characteristics of this resin are therefore referred to as single stage, which employs an alkaline catalyst.

A wide range of characteristics can be designed into a phenolic resin. Reactivity, moisture content, molecule weight, pH, monomer level, viscosity, flow, lubricity and particle size all may determine the suitability of a resin for a particular application. Through the controlled selection of formulation options, manufacturing parameters, cure promoters, lubricants and other additives, our phenolic gratings are optimised to meet the requirements of the customers.

Captrad use novolac resins in our phenolic moulded gratings, and resole in our phenolic pultruded gratings.

## ■ Captrad Phenolic Grating

Where fire, smoke and toxic fumes are critical parameters, phenolic gratings are materials of choice.

Captrad now offers two complete systems of Phenolic Gratings:

- Regular Strength (RS) Phenolic Moulded & Pultruded Grating Systems
- Fire Strength (FS) Phenolic Moulded and Pultruded Grating Systems  
(US Coast Guard Approved level 2 & Level 3)

## ■ High Fire Temperature Performance

A key feature of Captrad's Phenolic gratings is the ability to withstand high temperatures, along with mechanical load with minimal deformations or creep. In other words, cured phenolic resins provide the products rigidity necessary to maintain structural integrity and dimensional stability even under severe conditions. For this reason, phenolic gratings are specified for demanding application such as public safety areas to allow more time to escape in a fire

## ■ Low Smoke & Toxic Fume Emissions

If there is a fire, phenolic resin typically generates hydrogen, hydrocarbons, water vapour and carbon dioxide when exposed to temperatures above its decomposition. In a fire situation, phenolic resins produce a relatively low amount of smoke at a relatively low level of toxicity

## ■ Other Features

- Excellent strength to weight ratio
- Corrosion and Chemical Resistance
- Low Thermal Conductivity
- Easy Fabrications and Installations
- Outstanding Durability
- Cost Effective
- Impact Resistant
- Anti-Slip

## ■ Colour Selection



# Captrad Phenolic Gratings

## ■ TYPICAL APPLICATIONS

- Platforms
- Walkways
- Decking
- Flooring
- Stairs
- Bridges
- Ramps
- Channels



## ■ INDUSTRIAL FIELDS

- Offshore
- Mass Transit Tunnels
- Shipdecks
- Mines
- Refineries
- Chemical Processing Plants
- Public Structures
- Marine Vessels and shipyards

## ■ ASTM E 84-04 --- Flame Spread and Smoke Density Test

TEST RESULTS		MPH100	MPH150	MPH200	MPH150C	PPH60150
FLAMESPREAD INDEX		5	0	0	5	10
SMOKEDEVELOPED INDEX		15	0	0	10	85
SPECIMEN DATA						
Time to Ignition	(sec.)	215	0	353	332	84
Time to Max FS	(sec.)	599	2	501	594	165
Maximum FS	(feet)	4.5	0.0	1.1	2.3	2.1
Time to 980° F	(sec.)	Never	Never	Never	Never	Never
		Reached	Reached	Reached	Reached	Reached
Max Temperature	(° F)	543	441	486	499	418
Time to Max Temperature	(sec.)	583	599	592	600	599
Total Fuel Burned	(cubic feet)	51.5	51.55	51.56	51.52	51.55
FS*Time Area	(ft*min)	13.1	0.1	3.1	8.2	17.2
Smoke Area	(%A*min)	15.7	0.2	2.1	9.6	83.3
Fuel Area	(F*min)	4448.9	3529.9	3988.5	3954.2	3222.6
Fuel Contributed Value		0	0	0	0	0
Unrounded FSI		6.7	0	1.6	4.2	8.9
CALIBRATION DATA						
Time to Ignition of Last Red Oak	(sec.)	38	38	38	38	38
Red Oak Smoke Area	(%A*min)	96.00	96.00	96.00	96.00	96.00
Red Oak Fuel Area	(F*min)	8587	8587	8587	8587	8587
Class Fiber Board Fuel Area	(F*min)	5396	5396	5396	5396	5396