

# Changing What's Possible for Bonding Metal Assemblies

## 3M™ Scotch-Weld™ Metal Bonder Acrylic Adhesive DP8407NS

Designed for bonding a wide range of metals and assemblies, the new 3M™ Scotch-Weld™ Metal Bonder Acrylic Adhesive DP8407NS delivers exceptional strength, extreme temperature resistance and reliable performance. Replace mechanical fasteners and welds and take advantage of these benefits!

### Advancements for products and production

- Minimal surface preparation – bonds through slightly oily metals
- Extreme temperature resistance up to 300°F / 149°C and down to -40°F / -40°C
- Fast cure and high impact resistance
- Long shelf life, no refrigeration
- Enables design innovations by eliminating welding and mechanical fasteners

### Performance for extreme conditions

This is the solution for extreme conditions – from hot and cold temperatures to oily surfaces and harsh environments. Your products and processes will benefit from high impact strength, fast cure and corrosion resistance.

### Industry applications

- Metal fabrication
- Transportation
- Specialty vehicle
- Architectural panels
- Appliances
- Office furniture
- Signage

It's time to change what's possible with this proven addition to the highly successful line of 3M Next Generation Structural Acrylic Adhesives.

**What's your challenge?  
Solve it with a smarter bond.**



# The high strength solution for extreme temperature processes

Assemblies that require powder coating or painting typically encounter extreme temperature challenges. The new 3M Metal Bonder Acrylic Adhesive DP8407NS is designed to withstand these temperatures, making it possible to eliminate mechanical fasteners, welds and spot welds, and take advantage of the design and process benefits of 3M's bonding science.

## The advantages for products and processes

- Promotes adhesion to bare steel, aluminum and most other metals
- Eliminates the process and finishing time associated with welding and mechanical fasteners

## Handles extreme oven temperatures

- Handles extreme temperatures – up to 400°F / 204°C for at least one hour
- Designed to withstand powder coat and paint bake processes

## Overlap Shear Simulated Powdercoat Process Effects

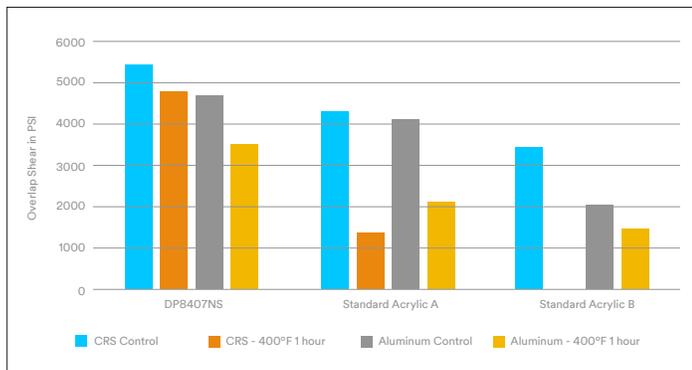


Chart shows the strength retention after a simulated powder coat heat cycle for each adhesive. Lower retention indicates a permanent loss of strength. DP8407NS loses very little permanent strength when exposed to a temperature of 400°F for 1 hour.



## Load bearing performance

- Maintains load-bearing performance at extreme temperatures

## Dead Load Holding Strength at 400°F / 204°C for 1 Hour

DP8407NS withstands a load of 75 psi at 400° F/204° C for 1 hour, but not at 100 psi

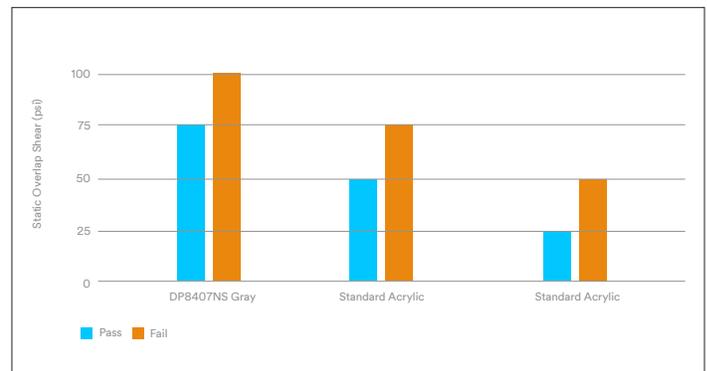


Chart shows the shear load (dead load in shear) that the adhesive can hold at 400°F (powder coat temperature). Blue bar: load held. Orange bar: load did not hold (fail). DP8407NS can hold a dead load in shear of 75 lbs during a powder coat cycle; but may fail at higher loads.



# Improved bare metal applications

Until now, corrosion has been a challenge for designers of metal products and sub-assemblies. The new 3M Metal Bonder Acrylic Adhesive DP8407NS helps combat this challenge, making it possible to bond a variety of metal alloys.

## The advantages for products and processes

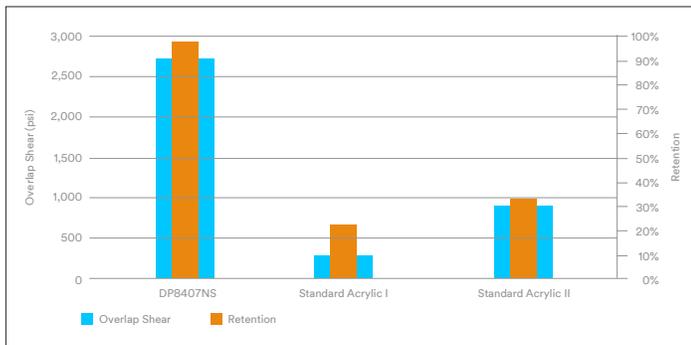
- Bonds aluminum, steel, galvanized steel, brass, copper, nickel, and most other metals
- Eliminates the need for metal fasteners or welding

## Resists corrosion

- Minimize performance loss compared to standard acrylics

## Bond Strength Retention after High Temperature and Humidity Exposure

Overlap shear on abraded cold rolled steel; 72°F test temperature; 500 hours exposure 150°F + 80% RH



On abraded, cold rolled steel, DP8407NS shows high shear strength after exposure to 150°F and 80% relative humidity for 500 hours (accelerated outdoor weathering), whereas some competitive acrylics will lose strength due to steel corrosion accelerated by the adhesive.

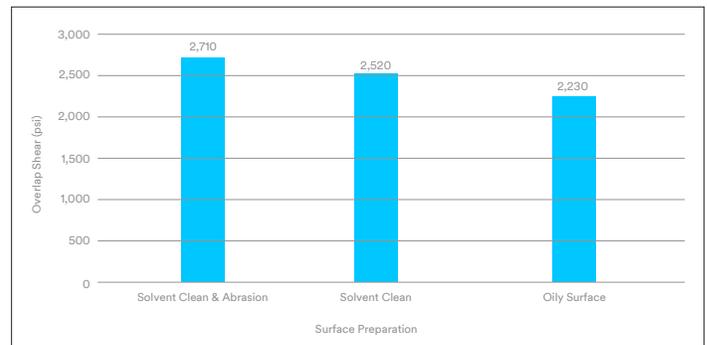


## Bonds oily metal

- Minimal surface prep

## Bond to Oily Metal with no Surface Preparation

80-90% performance retention bonding to oily metals



DP8407NS achieves very high bond strength even on oily, unabraded steel, indicating that surface preparation steps may not be needed (always remove oxide from metals prior to bonding).



# 3M™ Scotch-Weld™ Metal Bonder Acrylic Adhesive Key Properties

Product (Color)	Key Features	Mix Ratio B:A (Volume)	Approximate Viscosity at 75°F (24°C) (cP)	Approximate Mixed Work Life at 75°F (24°C)	Approximate Time to Handling Strength at 75°F (24°C)	Overlap Shear at 75°F (24°C)	Overlap Shear at 180°F (82°C)	Floating Roller Peel 75°F (24°C)
DP8407NS	<ul style="list-style-type: none"> <li>High impact</li> <li>Adhesion to most metals</li> </ul>	10:1	20,000	7 minutes	24 minutes	4500 psi	1400 psi	50

## Ordering Information

Product	Size	Units/ Case	STOCK #	UPC
DP8407NS	45 mL	12/CV	62-2853-1445-0	0-00-76308-86273-2
	490 mL	6/CV	62-2853-3630-0	0-00-76308-86285-5
	5 Gallon Part B	1/CV	62-2853-8530-0	0-00-76308-86306-7
	55 Gallon Part B	1/CV	62-2853-9530-0	0-00-76308-98878-4
	1 Gallon Part A	1/CV	62-2853-7530-0	0-00-76308-86366-1
	5 Gallon Part A	1/CV	62-2853-8530-0	0-00-76308-86367-8

## Hardware

Product	Size	Units/ Case	STOCK #	UPC
EPX™ Plus II Applicator	45 mL	10	62-9170-9930-1	0-00-21200-50004-6
Pneumatic Applicator	490 mL	1	62-9152-9930-9	0-00-51115-69041-9
Manual Applicator	490 mL	1	62-9182-9930-6	0-00-51115-71115-2
Plunger	45 mL	10	62-9160-9910-4	0-00-51115-69044-0
Square Orange Nozzle	45 mL	36	62-9154-9136-9	0-00-51115-69043-3
Helical Orange Nozzle	490 mL	36	62-9158-9136-0	0-00-51115-69042-6
Square Green Nozzle	490 mL	36	62-9184-9490-7	0-00-51115-81619-2



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