

**HOLDEN**

Holden Limited
Engineering Department

MATERIAL SPECIFICATION

NUMBER : HN 2091
SHEET : 1 of 5
RELEASE : February, 1993
REVISION : November, 2001

NAME: ADHESIVE, STRUCTURAL TWO-PART

1. SCOPE

The material defined by this specification is a pumpable, two component structural adhesive. It is obtained by mixing in a specific ratio HN 2089 and HN 2090. It is used to bond hem flanges of engine hoods, deck lids and doors. It is suitable for use on oily and unclean surfaces such as galvanised steel, zinc coat steel and cold rolled, low carbon steel (CRLC).

A component of the adhesive causes some initial strength to be obtained immediately on hem closure. This is followed by a partial room temperature cure and full cure in the Elpo oven.

2. MIXING RATIO

HN 2089	3.44 Parts by Weight	4.0 Parts by Volume
HN 2090	1.0 Part by Weight	1.0 Part by Volume
Tolerance +/- 10%.		

When supplied in cartridges, the extruded product must be mixed according to the recommended ratios described above. It is the suppliers responsibility to ensure that the packaging of this two part adhesive reflect the correct mix ratio. It is the responsibility of the applicator to ensure that the correct application/ dispensing equipment is used.

3. REQUIREMENTS OF UNCURED AND PARTIAL ROOM TEMPERATURE CURED ADHESIVE

- 3.1 Density (ASTM D816) 1.26 +/- 5%.
- 3.2 Sag Resistance (HN 0237, use 6 mm diameter bead) - No sag.

*THIS DOCUMENT MUST NOT BE REPRODUCED. IF USED IN RELATION TO
THE COMPANY'S PRODUCTS THE RECIPIENT IS RESPONSIBLE TO
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3. REQUIREMENTS OF UNCURED AND PARTIAL ROOM TEMPERATURE CURED ADHESIVE (continued)

3.3 Work Life - Purge Frequency

Time frequency at which one static mixer volume of adhesive shall be purged to prevent curing of material in the dispensing tip during production application of the adhesive.

1.	Ambient Temperature 12° C	-	16 minutes.
2.	Ambient Temperature 18° C	-	13 minutes.
3.	Ambient Temperature 25° C	-	10 minutes.
4.	Ambient Temperature 35° C	-	9 minutes.
5.	Ambient Temperature 43° C	-	8 minutes.

3.4 Phosphate Coating System Resistance

There shall be no displacement, washout or leaking of material which may have a deleterious effect on the phosphate cleaning system.

3.5 Electrocoat Compatibility

There shall be no displacement, washout or leaking of material which may have a deleterious effect on the electrocoat solution.

4. ROOM TEMPERATURE AND FULL CURE PERFORMANCE

4.1 Expansion (No porosity or expansion)

Extrude a 13 mm dia bead 200 mm long on to a 100 x 300 mm CRLC steel panel. Place the test panel in an oven and bake at 190° C for 30 minutes. Allow to cool for 1 hour then cut the adhesive and panel longitudinally through the centre of the bead. Examine for voids, porosity or expansion caused by internal gassing.

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