



TECHNICAL BULLETIN

HAPWELD 36 A/B - HAPWELD 37 A/B HAPWELD 38 A/B - HAPWELD 39 A/B

HAPWELD 36 A/B is a two part, non-shrinking, 100% solids, amber clear, polymer adhesive which cures at room temperature. It is a flowable polymer adhesive, which forms permanent structural bonds between similar and dissimilar materials. Once hardened, **HAPWELD 36** resists moisture, water, solvents, chemicals, and retains good bond strength up to 160⁰ F.

HAPWELD 36 can be used from 2:1 to 1:1 by volume, or weight, which makes it ideally suited for both field and production applications. **HAPWELD 36** is the "workhorse" of our polymer adhesive line and will bond most metals, plastics, ceramics, wood, fabrics, canvas, etc. As you increase the mix from 2:1 to 1:1, the cured product becomes semi-rigid and has lower heat resistance.

HAPWELD 37 A/B is a thixotropic (putty-type) version of **HAPWELD 36 A/B**. **HAPWELD 37** has a creamy, non-sag consistency, which can be applied with a trowel, knife, or brush, and adhesive will not sag or shrink. The smooth consistency allows the user not only to use **HAPWELD 37** as an adhesive, but also as a void filling and filleting putty. **HAPWELD 37** can be easily machined; feather edged, drilled, tapped, turned in a lathe, sanded, and polished. It is compatible and will bond to most metals, wood, plastics, ceramics, fabrics, and compositions of almost any type. Another added advantage of **HAPWELD 37** is that Part A is black and Part B is white. When mixed, they turn grey. This color-coding insures the user both a good homogenous mix and also allows the user to spot-check the mix ratio by color. Some proven applications are: filleting spot welded metal parts, forming a radius on foundry patterns, patching of all types, anchoring bolts and machines, repairing valves, shafts, bonding magnets, and repairing pitted bearing surfaces.

HAPWELD 38 A/B is similar in most characteristics to **HAPWELD 36 A/B**, mix ratio, clarity, etc., but also has the ability to gel and cure very quickly (gel time, 5-10 minutes). **HAPWELD 38** can be used in all the same type applications as **HAPWELD 36** and should be used when either a faster set or cold cure is required. In some applications, the need for exotic holding fixtures, or large amounts of storage or "rack space", is eliminated. **HAPWELD 38** can be used in high production applications.

HAPWELD 39 A/B is similar in most characteristics to **HAPWELD 37**; mix ratio, consistency, color, etc., but also has the ability to cure fast (15 minutes @ 77⁰ F.) and will cure in temperatures as low as 0⁰ F. **HAPWELD 39** can be used when either a faster set (less than 1/2 hour) or cold cure are required. This unique polymer adhesive lends itself to outdoor applications year round; patching tanks, repairing valves and shafts, repairing cement or brick, caulking, sealing, and all types of adhesive applications. The decreased cure time also makes **HAPWELD 39** ideally suited for faster, in line, production cycles

MIXING:	<u>36 Hard</u>	<u>36 Semi-rigid</u>	<u>37 Hard</u>	<u>37 Semi-rigid</u>	<u>38</u>	<u>39</u>
By volume (A/B)	* 2:1	** 1:1	* 2:1	** 1:1	1:1	1:1
By weight (A/B)	* 2:1	** 1:1	* 2:1	** 1:1	1:1	1:1

When mixing by hand, always be sure to scrape the sides and bottom of the container to insure complete mixing. When using the color-coded products (37 & 38), make sure a uniform color is obtained.

CURING

HAPWELD 36 & 37 must be cured 24-48 hours @ 70⁰ F.

HAPWELD 38 & 39 will cure at temperatures as low as 0⁰ F. (see chart)

GEL TIMES FOR HAPWELD 38 & 39:

100 ⁰ F	3-5 minutes
70 ⁰ F	15-20 minutes
50 ⁰ F	30-45 minutes
32 ⁰ F	3-4 hours
0 ⁰ F	6-8 hours

- * Hardest, strongest mix
- ** Semi-rigid, medium strength mix

<u>PHYSICAL PROPERTIES</u>	<u>36</u>	<u>37</u>	<u>38</u>	<u>39</u>
Viscosity cps	30,000	thixotropic	6000	thixotropic
Working Life	*40 minutes to 120 minutes		4 minutes to 6 minutes	
Color mixed	amber/clear	grey	amber/clear	grey
Weight/gal.	8.75 lbs.	11 lbs.	9.5 lbs.	11 lbs.
Service Temp.	- 100 ⁰ F.to.....+160 ⁰ F.			
Cure Time @ 70	24-48 hrs	24-48 hrs	1/2 hr	1/2 hr
@ 50	48-96 hrs	48-96 hrs	16 hrs	16 hrs
@ 32	none	none	24 hrs	24 hrs
@ 0	none	none	2-3 days	2-3 day

<u>PHYSICAL PROPERTIES</u> (cont.)	<u>36</u>	<u>37</u>	<u>38</u>	<u>39</u>
Tensile Strength psi	8250	7500	7800	7400
Ultimate Elongation %	7.5	5	6	5
Hardness Shore D	80	85	78	82
Izod Impact ft. lbs./inch notch	1.2	1.5	1.3	1.5
Tensile Shear Strength psi	4200	4000	2500	2500

ELECTRICAL PROPERTIES:

Dielectric constant @ 77 ⁰	3.5	3.7	4.1	4.2
Volume Resistivity @77 @150	10 ¹⁶ 10 ¹³	10 ¹⁶ 10 ¹⁴	10 ¹¹ 10 ¹⁰	10 ¹¹ 10 ¹⁰

* Depending on mix ratio. Longest working life is at 2 parts A to 1 part B and the shortest is at 1:1 mixing ratio.

SURFACE PREPARATION TO PREVENT ADHESION:

To prevent adhesion to the mold, use a GREASE-IT release agent. The following are recommended; GREASE-IT II, GREASE-IT IV, GREASE-IT V, GREASE-IT WAX P, or GREASE-IT WAX LT, use GREASE-IT FDG when a Food & Drug grade release is required. For best results, apply in a few thin coats, drying between coats. Porous surfaces, i.e. wood, plaster, etc, must be sealed thoroughly before release is applied. Use multiple coats of a good coating, such as: a high-grade lacquer or urethane lacquer.

SURFACE PREPARATION FOR ADHESION:

For applications where adhesion is desired, the surface must be cleaned, abraded and dried. Sandblasting and mechanical roughing are the preferred ways of abrading surfaces to be bonded. For added adhesion to metals use Primer 200 and for added adhesion to plastic, use Primer 810. Make sure all surfaces are clean, dry and free from moisture.

AIR RELEASE:

Use HAPCO'S ANTI-AIR to aid in air release (see Technical Bulletin). In some products, ANTI-AIR can cause a slight haze to cloudiness. This has no effect on properties.

MIXING:

IMPORTANT: Before each use, mix individual components, Part A and Part B, thoroughly before proportioning out the required amount. Components may separate and should be mixed before each use. Mix, only when ready to use, by adding the curing agent to the resin portion and blending together thoroughly. Be sure to scrape and stir in all material sticking to the sides and bottom of the mixing container. Do not use paper containers or wooden mixing sticks. They may contain moisture. For best results, use plastic or coated containers, and metal or plastic sticks.

MACHINE MIXING AND DISPENSING:

Use HAPCO'S *RAPID*fil, *MIN*fil, and/or *RAPID*shot Dispensing Equipment for fast, reliable, and efficient dispensing.

CLEAN UP:

Cured polymers are difficult to remove. It is best to clean tools and equipment immediately after use. Use Hapco's A-TAK for best results.

STORAGE:

Polymer systems have a minimum shelf life of six months when unopened. Both components should be stored in a room temperature dry place. When not in use, containers should be kept tightly closed.

RESEALING:

Many polymers are moisture sensitive, reseal, using one of the following two (2) methods: blanket with nitrogen or use a hair dryer for 30 seconds to cover with dry air.

PRECAUTIONS:

CAUTION: The MSDS should be read thoroughly before using this product.

Skin or eye contact with polymers should be avoided. Clean housekeeping procedures are urged and the use of gloves and/or protective creams suggested. All polymers, as a general practice, should be used in well-ventilated areas. Spot ventilation is most effective. Contaminated clothing should be removed immediately and the skin washed with soap and water or waterless skin cleaner. Should accidental eye contact occur, wash thoroughly with water and consult a physician.

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The information presented here is based on carefully conducted laboratory tests and is believed to be accurate. However, results cannot be guaranteed and it is suggested that customers confirm results under their conditions and in their applications before production use.

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