

WEIR

ESCO

SOCKETFAST®
Resin Compound
For Wire Rope Assemblies



Safety

General safety information

The safety practices described in this manual are meant as guidelines for safe operation under most conditions and are meant to supplement any safety rules and/or laws that have been established at your worksite.

▲ WARNING: *Read this entire manual prior to conducting the maintenance procedures described in this manual. Failure to follow these instructions could result in injury or death.*

Signal words

Throughout this manual are statements preceded by a special attention symbol: “▲”. The symbol is used with the following signal words to attract your attention to information regarding safety issues.

▲ WARNING: *Indicates a hazardous situation which, if not avoided, could result in serious injury or death.*

▲ CAUTION: *Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.*

▲ NOTICE-DAMAGE ALERT: *Indicates information that should be acted upon to avoid significant equipment or machine damage that could result in unplanned downtime or maintenance.*

Additional signal words that are not preceded by the attention symbol are:

IMPORTANT: *Indicates information that possesses special significance to the maintenance procedures.*

TIP: *Indicates information that may simplify the maintenance procedures or make your job easier.*

Personal safety

▲ WARNING: *When performing the work described in these instructions, use proper personal protection equipment to help avoid injury. Always wear hard hat, gloves, safety shoes, eye protection, hearing protection and fall protection that complies with regional, national and worksite requirements (e.g., OSHA, MSHA) when working with this equipment. To avoid injury to bystanders, keep them a safe distance from the work area.*

ESCO® SOCKETFAST® — important safety information

▲ WARNING: *SOCKETFAST resin is not for use with stainless steel wire rope.*

▲ WARNING *Select sockets designed for resin socketing. Avoid using sockets with rings. If sockets with rings are used, the rings should be filled prior to pouring the resin.*

▲ WARNING *SOCKETFAST resin must not be used with zinc ferrules.*

IMPORTANT: *SOCKETFAST Safety Data Sheets (SDS) are available at www.esco.weir.*

SOCKETFAST® resin for stronger, more reliable wire rope assemblies

SOCKETFAST resin is a convenient two-part liquid system. Installations can be done in a variety of locations; at the shop, on a ship deck, or on the job site. Uniform blending of the two part liquid system ensures a homogenous mixture, and allows horizontal pouring if necessary.

SOCKETFAST resin provides

- Suitable for on-site wire rope assembly
- Easy to use with a quick cure time
- 100% of the rated wire rope strength
- Available in 3 convenient sizes



ESCO® SOCKETFAST®

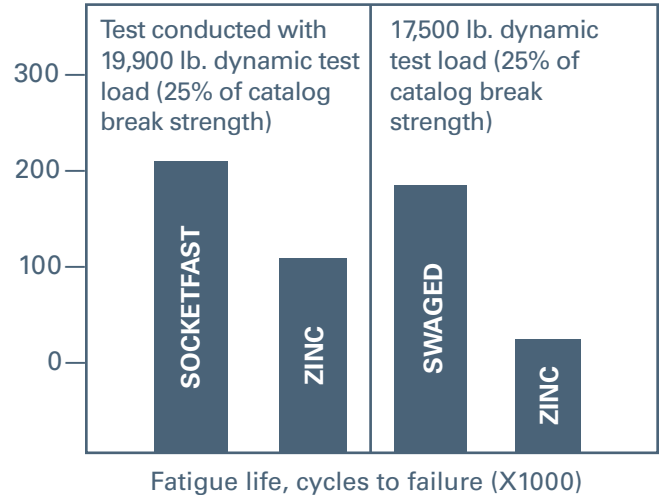
ESCO SOCKETFAST performance

SOCKETFAST resin withstands severe environments – Extremely reliable over a wide range of temperatures – from -55°C to 95°C (-65°F to 200°F). This resin is also not affected by electrolysis or by immersion in most corrosive fluids.

100% of rated rope strength – Independent tests confirm that socket assemblies properly made with SOCKETFAST resin provide 100% of the rated rope strength.

Maximum resistance to shock loading and fatigue – Test results show that rope assemblies using SOCKETFAST resin withstand repeated shock loads better than other termination methods because of better elasticity.

SOCKETFAST resin cures quickly – Assemblies develop 100% of rated rope/strand break strength after 1 hour at 21°C (70°F) or are ready for service in only 5 minutes after a 120°C (250°F) cure. SOCKETFAST resin beds in or creeps in the socket basket up to 30% less than zinc on initial loading.



SOCKETFAST storage

When stored at recommended temperatures, SOCKETFAST resin can be easily stored for a year or more. Refer to the chart below for recommended temperatures and the expected shelf life.

SOCKETFAST® Storage	
Storage Temperature	Shelf Life
65° - 80° F	9 Months
40° - 65° F	1 Year
Less than 40° F	1 Year+

IMPORTANT: ESCO SOCKETFAST should not be stored above 80° Fahrenheit

ESCO socketfast resin and ESCO spelter sockets are a perfect match — providing unsurpassed performance and reliability



ESCO® SOCKETFAST® resin volumes

SOCKETFAST resin kits

Three sizes of pre-measured kits are available for convenience and to minimize waste. The charts below provide volume information to assist in ordering the right amount of SOCKETFAST resin.



500 Grams (17.5 cu.in. / 287 cc)
16 per case

Volume of SOCKETFAST® Resin Required for ESCO Spelter Sockets

Rope or Strand Size	Rope Fitting Volume		
	in ³	grams	cc
1/4"	0.5	15	9
5/16"	1.1	30	17
3/8"	1.1	30	17
7/16"	2.1	60	35
1/2"	2.1	60	35
9/16"	3.2	90	52
5/8"	3.2	90	52
3/4"	5.3	150	86
7/8"	7.5	215	125
1"	9.7	275	160
1-1/8"	13	365	210
1-1/4"	21.5	610	350
1-3/8"	21.5	610	350
1-1/2"	26	735	420
1-5/8"	30	860	495
1-3/4"	43	1220	700
1-7/8"	43	1220	700
2"	78	2200	1265
2-1/8"	78	2200	1265
2-1/4"	86	2450	1410
2-3/8"	86	2450	1410
2-1/2"	112	3180	1830
2-5/8"	112	3180	1830
2-3/4"	137	3910	2250
3"	193	5500	3160
3-1/4"	232	6600	3795
3-1/2"	300	8560	4920
3-3/4"	365	10400	5980
4"	472	13450	7730



1000 Grams (35.1 cu.in. / 575 cc)
11 per case



4000 Grams (140.3 cu.in. / 2299 cc)
4 per case

Volume of SOCKETFAST® Resin Required for Elevator Shackles

Rope or Strand Size	Elevator Shackle Volume		
	in ³	grams	cc
3/8"	1.1	32	19
1/2"	2.1	60	35
9/16"	2.1	60	35
5/8"	3.5	100	58
11/16"	4.6	130	75
3/4"	5.1	145	84

SOCKETFAST® resin compound installation

Six easy steps

IMPORTANT: SOCKETFAST Safety Data Sheets (SDS) are available at www.esco.weir.

Step 1

Place a wire seizing on the rope at the point where it will emerge from the base of the socket. For elevator applications, allow for turned back strand.



Step 2

Open the rope and broom individual wires. Clean the broom with a solvent such as trichloroethane or other effective degreaser. Air or blow dry.



Step 3

Position the broom in the socket, mount the assembly securely, and align the axis of the rope and fitting. Most sockets will be poured vertically, as shown, but larger ones may be filled horizontally (refer to next page). Seal the socket neck with putty, duct tape or a similar material to prevent leakage. Make sure the socket temperature is at least 18°C (65°F) and preferably 25-30°C (75-85°F). Socket temperatures below 18°C (65°F) will increase cure time dramatically – below 60°F SOCKETFAST resin application should not be attempted.



⚠ CAUTION: Socket temperatures above 38°C (100°F) may cause premature hardening.

Step 4

Select the appropriate SOCKETFAST resin kit size, and make certain that the temperature of both liquid components are between 18-32°C (65-90°F). If necessary, warm both sealed components by immersing in hot, not boiling, water. With a stick or mixing blade, mix resin for a minute or two, being careful to scrape the sides and bottom of the container, to assure a uniform consistency with all filler in suspension. Next, add all of the catalyst to the container of resin and mix thoroughly. The large 4000 gram unit should be power mixed with electric drill and Jiffy mixing blade or similar item. After mixing, the gel time (pot life) for SOCKETFAST resin is 8-12 minutes at normal temperature of 22.2°C (72°F).



Step 5

Immediately pour the mix carefully into one side of the fitting, allowing the catalyzed liquid resin to displace the air. Fill to the top of the cone. Take a stiff wire strand and slowly work it up and down between the strands at several points to remove any trapped air.



Step 6

At 25°C (75°F), ESCO® SOCKETFAST resin will harden in 15 minutes to the point where the socket may be moved to a more convenient area to cure completely. One hour after initial application SOCKETFAST resin will cure sufficiently to exceed the breaking strength of the rope/strand. If an accelerated cure is needed apply heat. SOCKETFAST resin will cure completely in 5 minutes at 121°C (250°F). Heat the socket only and monitor the temperature. **DO NOT** exceed 149°C (300°F). **DO NOT** aim open flame at SOCKETFAST resin; use hot water, low pressure steam, hot air guns, or electric resistance heaters.



SOCKETFAST® resin compound installation

SOCKETFAST resin kits

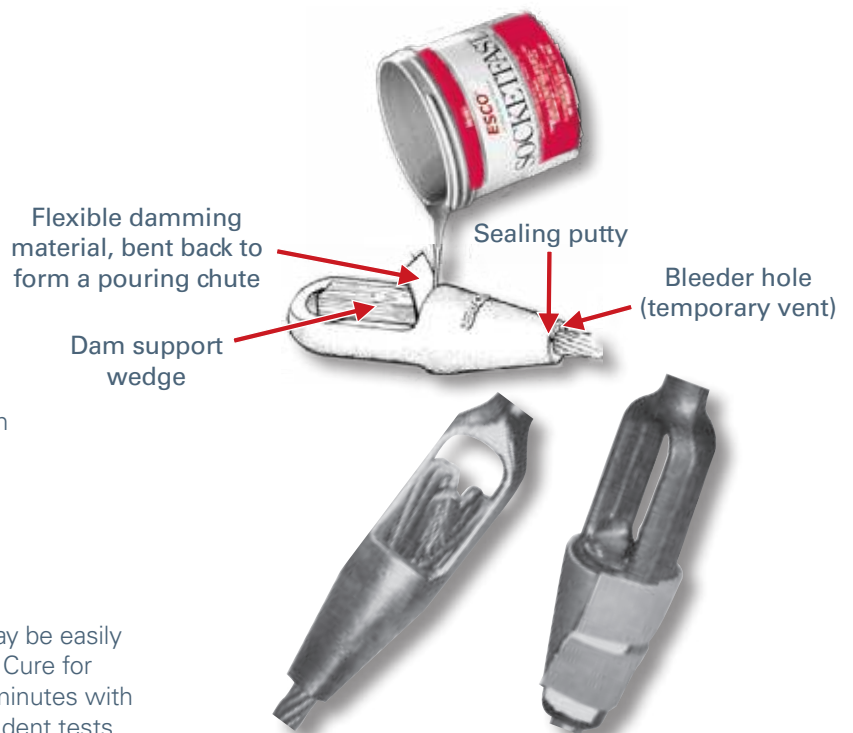
In shops or storage areas where reels of large-diameter wire rope are stored, on site socketing can save thousands of dollars in handling costs. This is also true in remote operations. For example, offshore drilling rigs and platforms, or mining areas. No need for transportation to a special socketing area! No need for elevated pouring towers!

After the wire rope is prepared as described, and after the fitting is installed, the assembled termination is placed in a horizontal position and blocked up to align the axis of the rope and the fitting. If a number of sockets are to be installed on a routine basis, a suitable cradle can be fabricated to simplify this alignment procedure. After checking the broom for uniform wire distribution, the annular space between the rope and the base of the fitting should be sealed with putty, leaving a small bleeder hole at the 12 o'clock position. This temporary vent, which later will be sealed with putty, will allow air to escape during the pouring of the ESCO® SOCKETFAST resin, thus assuring complete saturation of the resin at the apex of the broom.

Insert a piece of damming material, like cardboard or other flexible gasket material, and a wooden wedge at the large end of the basket, as illustrated. Place the cut to size dam over the opening, bending back the upper portion to form a chute and wedge it tightly in place. For open spelter sockets, insert a pin or dowel through the ears to serve as a pressure point for the block.

Fill the basket completely:

Pour until the resin begins to come out of the bleeder hole at the base of the fitting. Then, seal that hole with putty and continue pouring until the basket is filled completely and the level of SOCKETFAST resin in the resin in the chute remains constant. Excess material may be trimmed off after hardening, if desired.



Elevator fittings

Greater protection from high temperature pullouts

Utilizing standard elevator fittings, this convenient resin socketing system will withstand fire 50% longer than babbitt. ESCO SOCKETFAST resin equals or exceeds the performance characteristics of socket metal.

Easy to use, even in cramped quarters

In cramped work areas, the two liquid components may be easily mixed on location, then poured into prepared sockets. Cure for one hour at ambient temperatures or for only 5 to 10 minutes with a wraparound electric heater (see illustration). Independent tests confirm that socket assemblies properly made with SOCKETFAST resin provide 100% of the rated rope strength – with unsurpassed resistance to shock and fatigue loads. For elevator installations, follow preparation guidelines as outlined in ANSI Code A17.1, Rule 212.9e, page 82. No melting pots, torches, or other dangerous open flames are required.

Resin socket removal

Cut off the rope or strand as close to the base of the fitting as possible. Push out the SOCKETFAST resin with a press or drift pin.



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