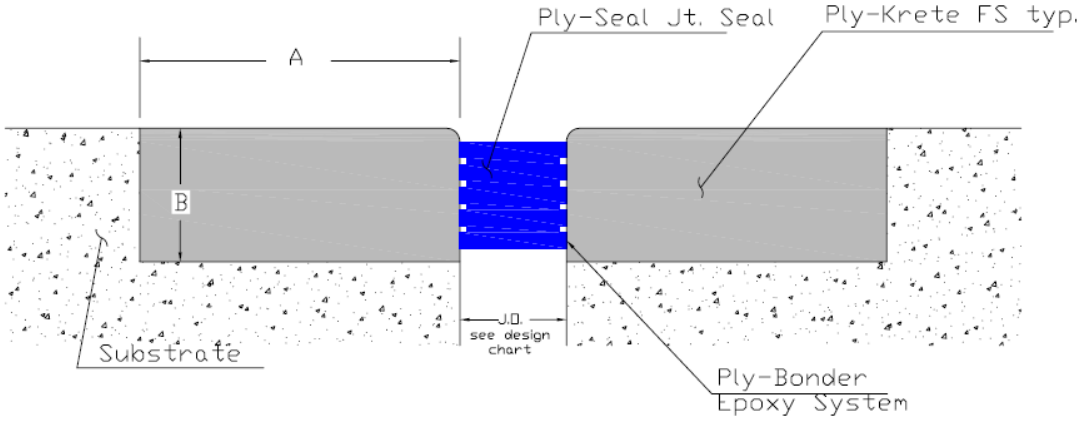
Ply-Krete® FS 350 Joint System

1) Product Description

Ply-Krete® FS 350 Joint System consist of **Ply-Seal®**, a waterproof joint seal, & **Ply-Krete® FS**, a **F**ast **S**etting, Low Viscosity, high strength, elastomeric concrete nosing material. This system is user-friendly with minimal downtime making it one of the most convenient systems available for Bridge Joints. Because the **Ply-Krete® FS** is poured-in-place, it may conform to almost any block out. The physical properties of this system reduces the need for expensive and cumbersome steel angles even on high volume, high speed, Interstate Bridges. The **Ply-Krete® FS 350 Joint System** is ideal for New & Rehab construction projects. This joint system is designed to preserve and protect concrete decks and substructures by preventing water absorption and minimizing chloride intrusion in the most abusive environments. The **Ply-Seal®** joint seal may continue up the parapets or across the sidewalks with or without the **Ply-Krete® FS** for a continuous waterproof seal.

2) Joint Detail



Ply-Krete® FS 350 Joint System

3) System Components and delivery

The system components are delivered in various units and packaging as follows:
The **Ply-Krete® FS** kit yields 0.52 cu. Ft/kit. Each kit consist of; 1 can part **A**, 1 can part **B** & 1 bag (or pail) **Tri-Blend** Aggregate*.
The **Ply-Krete® FS** cans may be packed in boxes, 3-A & 3-B per case. Aggregate bags may be packed on separate skids.
The **Ply Primer** is a 1 ½ gallon unit; 1 can part **A** & 1 can part **B;** yield is approximately 35-45 sq. ft. /gal.
The **Ply-Seal®** is manufactured to ordered length and size, rolled and delivered in separate boxes.
The **Ply-Bonder** (**Ply-Seal®** adhesive) is a 1-gallon unit; 1 can part **A**, & 1-qt. can part **B (**yield is approximately 35 sq. ft/gal)
Optional **Ply-Krete®** Mixers are available from Polyset for the contractors mixing convenience.
Damaged or previously opened containers shall not be used. Bags of aggregate that have become wet at any time shall not be used.
Material shall be stored in a dry area between 60 – 95^{0}F. Keep liquid components from freezing.
*Optional **Ply-Krete® FE** Aggregate (3/8" stone) is available upon request (in lieu of the standard aggregate with each kit).

.

4) Installation Instructions: **Ply-Krete® FS**

a) Please contact the Technical Representative at least one week prior to installation to review proper methods and to determine what tools and equipment are required. On larger projects it may be helpful to incorporate specific equipment. Some equipment may require more lead time.
b) Prepare block out area per plans and specifications.
c) Substrate must be clean, dry to touch (<5% moisture), sound, and free of incompatible substrates such as unapproved patching materials, delaminated concrete, salt, oil, or chemical saturation, degraded steel, etc. If the substrate is suspicious the on-site tech rep &/or manufacture shall be notified for recommendations prior to placement.
d) The bottom interface of the **Ply-Krete® FS** must be placed on a structural member. Any deviations from any of these instructions require manufacturer's approval and recommendations.
e) New concrete should be a minimum of 85% cured (10-14 days for 28 day concrete) prior to application.
f) Sandblast all surfaces against which the **Ply-Krete® FS** is to be placed to a 2mm profile minimum. Metalized steel may require only a 'brush-blast' to insure a clean surface. All non-Metalized steel shall be blasted to SSPC-10 (near-white finish). Remove all sand and debris with oil-free compressed air.
g) Be sure the temporary form for the joint opening is set per plans and specifications and insure a tight fit to prevent elastomeric concrete from leaking into the joint opening. Do not use any form release agents!
h) Prepare the **Ply-Primer** according to directions. Apply with protective gloved hand or brush. The coated area need only be thick enough to not see through. Avoid puddling.
i) Prime all surfaces that are to be in contact with the **Ply-Krete® FS** elastomeric concrete. Place mixed **Ply-Krete® FS** immediately after priming, no waiting time is needed.
j) Mix elastomeric concrete according to proper ratio. Mix parts A & B first (apx. ½ - 1 min.) then add the supplied aggregate and mix thoroughly. All aggregate should be saturated with the resin mixture.
k) Place the mixed **Ply-Krete® FS** elastomeric concrete into the prepared area per plans and specifications. Make sure that it is thoroughly compacted under any steel angles, around any anchors and within the block out. Trowel flush. Working time of mixed material varies, depending on temperatures.
l) Average placement time of the **Ply-Krete® FS** material is about 3-5 minutes/kit from beginning of mixing.
m) After cure, remove temporary forms and grind a ¼" bevel to the two opposing top joint nosing edges.

Notes:

A.) If a faster cure is required, or in very cold applications, please contact your supplier for recommendations.
B.) Installations should be a minimum of 3 degrees above due point.
C.) Minimum ambient temperature during installation is 45^0F (and rising).
D.) The warmer the product the faster the cure time. The opposite is also true.
E.) Keep unmixed, uncured product from freezing.
F.) Keep Aggregate DRY.

5) Traffic Ready Time

In placed **Ply-Krete® FS** is an ambient cure system and therefore temperature & mass dependent. Preheating or post heating is not necessary. The following open to traffic time may be used as a guide for the unheated system at the listed ambient temperatures. Please contact Polyset (518-664-6000) for site specific recommendations.

- 95-80^{0}F : 1 - 2 ½ hrs
- 80-65^{0}F : 2 - 3 ½ hrs
- 65-45^{0}F : 3 - 4 ½ hrs

6) Joint Seal Selection

Ply-Seal® Design Chart

Model	Joint Opening		Recommended Ply-Seal Size Width x Depth		Movement Range of Seal	
	inches	mm	inches	mm	inches	mm
#1.38	1	25	1 3/8 x 2	35 x 51	0.5 - 1.8	12.7 – 45.7
#1.63	1 1/4	32	1 5/8 x 2	41 x 51	0.6 - 2.1	15.2 – 53.3
#2.00	1 1/2	38	2 x 2	51 x 51	0.8 - 2.6	20.3 – 66.0
#2.38	1 3/4	44	2 3/8 x 2	60 x 51	0.9 - 3.1	22.9 – 78.7
#2.75	2	51	2 3/4 x 2	70 x 51	1.1 - 3.6	27.9 – 91.4
#3.00	2 1/4	57	3 x 2 1/2	76 x 64	1.2 - 3.9	30.5 – 99.1
#3.25	2 1/2	64	3 1/4 x 2 1/2	83 x 64	1.3 - 4.2	33.0 – 106.7
#3.50	2 3/4	70	3 1/2 x 2 1/2	89 x 64	1.4 - 4.5	35.6 – 114.3
#4.00	3	76	4 x 3	102 x 76	1.6 - 5.2	40.6 – 132.1
#4.50	3 1/2	89	4 1/2 x 3	114 x 76	1.8 - 5.8	45.7 – 147.3
#5.00	4	102	5 x 3 1/2	127 x 89	2 - 6.5	51 – 165.1
	This is a partial list of available sizes. Other sizes and shapes available upon request.					
	Use this chart as a guide for Joint Seal selection. Contact Polyset (518-664-6000) for project specific sizes.					

7) Installation Instructions: **Ply–Seal®**

Ply-Seal® Joint Seals may be installed in many different applications. Please contact the supplier for specific application instructions that would not otherwise be covered by the following standard instructions. A clean dry substrate is recommended during installation.

a) **Confirm Proper Seal Size:** The Joint Seal should be larger than the joint opening during installation. A temperature chart may be available on the drawings or contact the supplier for proper fit to existing joint opening in relation to temperature and movement range.

b) **Surface Preparation:** All surfaces in contact with the joint seal shall be sandblasted with oil free compressed air. Steel substrates shall be prepared to a white finish with a good surface profile (SSPC-10). Steel, concrete, and elastomeric concrete (**Ply-Krete®** brands) need not be primed prior to **Ply-Seal®** installation. Steel with coatings or additives may require priming. Please contact your supplier if such conditions exist. Metalized steel requires a light brush-blast to insure all foreign debris is removed. Use compressed air to remove dust and debris after blasting. Optional: Apply duct tape to the top edges of the deck ¼ - ½" away from the joint to reduce clean up and enhance workmanship.

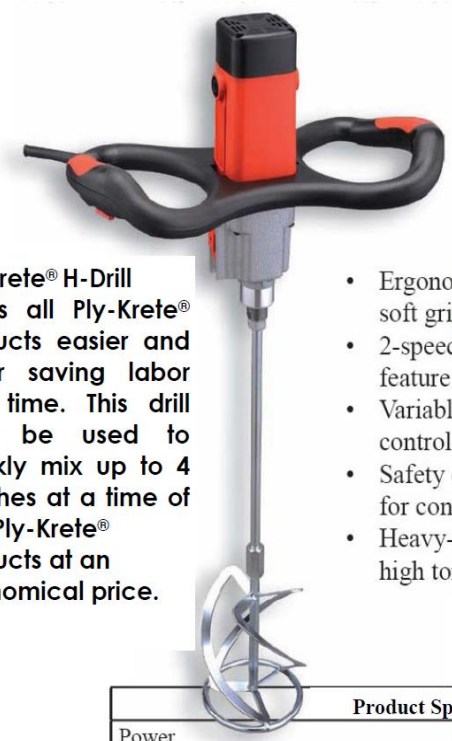
c) **Heat-Welding:** All intersections and connections should be performed prior to mixing epoxy. Heat-Welding is the recommended method to connect sections together. A trained factory representative may be required and/or a factory approved welding tool may be used to insure this procedure is correctly performed. Most seals may be ordered to length. Additional welds may be field performed.

d) **Installation:** You may desire one man for each of the following steps. Mix the **Ply-Bonder®** epoxy per instructions. Coat both sides of the substrate. Coat both grooved sides of the seal with the epoxy. With gloved hands or tool, compress & install the seal into the joint about 1/8-1/2" below the surface, depending on the radius of the joint nosing. Immediately remove excess epoxy from the top surface of the seal with a clean dull trowel so as to not damage the seal and allow for free movement. Do Not Use Solvents.

Average installation time of the **Ply-Seal®** joint seal is about 1-2 ft. /minute for 2 - 3" deep seals.

Some suggested supplies to have on site during installation:
Duct tape, ½" heavy-duty low-speed drill w/Mixing paddle, empty mixing pails, flat head screwdriver, utility knife, power cords, plastic &/or roofing felt, margin trowels, protective gloves, rags, knee pads, heat-welding tool if conditions required, and Ply-Cleaner clean-up solvent. Please keep solvents away from in place, uncured resins.

Optional Mixing Equipment available (for convenience) from Polyset: **Ply-Krete® H-Drill**
The **Ply-Krete® H-Drill** mixes efficiently, quickly, and effortlessly all **Ply-Krete®** elastomeric concretes at a very economical price.



Ply-Krete® H-Drill

Ply-Krete® H-Drill Mixes all Ply-Krete® Products easier and faster saving labor and time. This drill may be used to quickly mix up to 4 batches at a time of the Ply-Krete® Products at an economical price.

- Ergonomically designed handle with a soft grip feature
- 2-speed power mixer with a soft start feature
- Variable speed with a constant speed control setting
- Safety on/off switch with lock-on button for continous operation
- Heavy-duty gearbox with a powerful high torque motor

Product Specifications	
Power	1300W / 11 Amps/ 1.7 Hp
Voltage	120V/60Hz
Number of Gears	2
No Load Speed I	180 - 460 rpm
No Load Speed II	300 - 700 rpm
Standard Mixing Paddle Connection	M14 x 2
Motor protective type / class	Double Insulated / II
Mixing Paddle (ø Max.)	5-1/2" (140mm)
Shipping Weight	16.5 lbs (7.5 Kg)