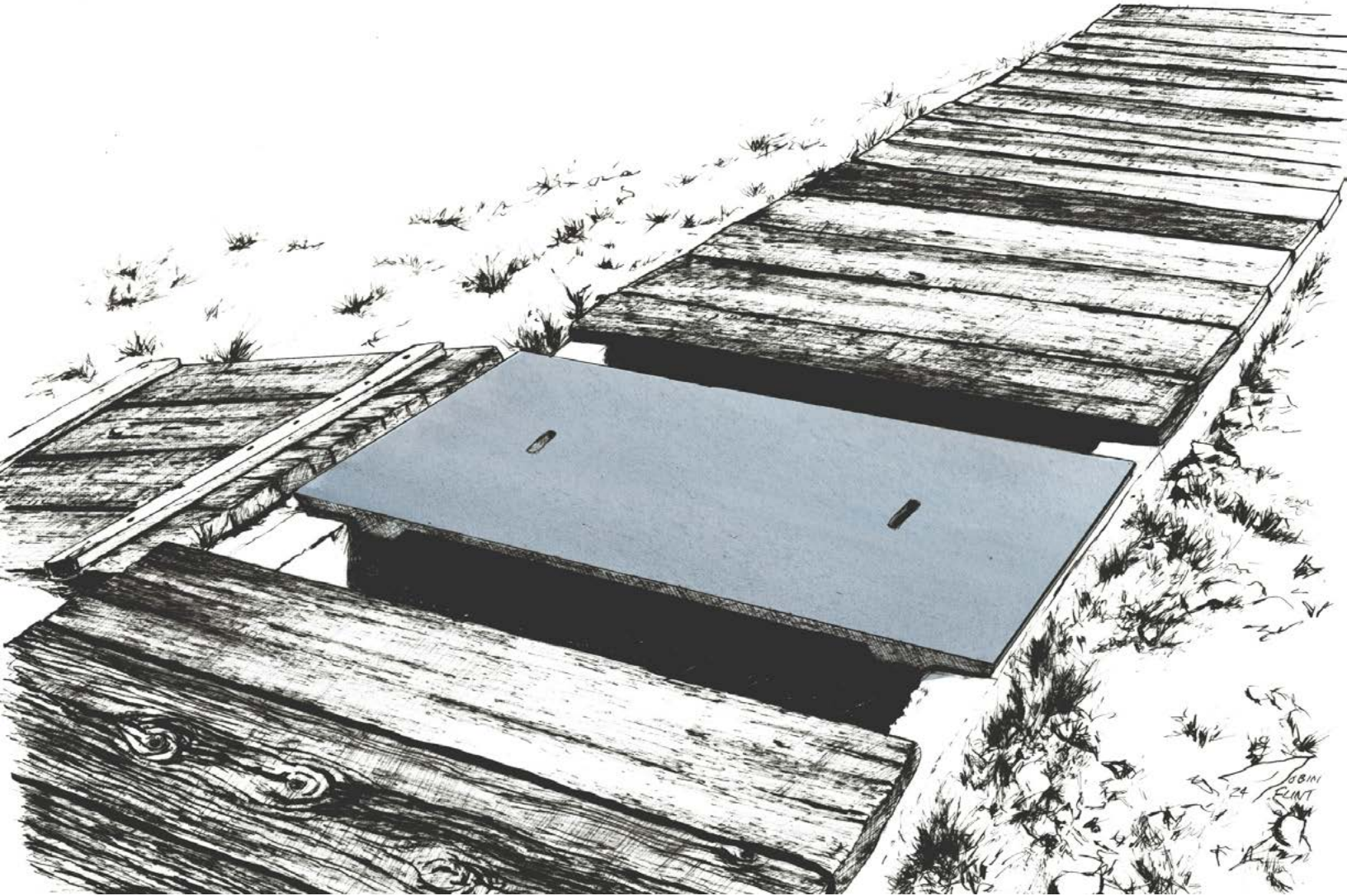




CONCAST

Fibercrete®

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE



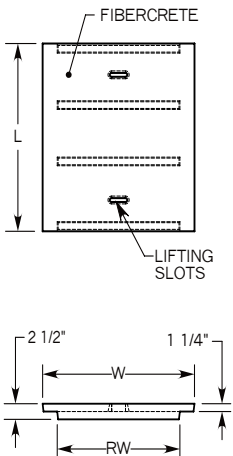
REPLACEMENT COVERS

POLYMER, CONCRETE, FIBERCRETE OR ALUMINUM

Replacement Cover Overview



POLYMER & FIBERCRETE® REPLACEMENT COVERS



Pedestrian Polymer & Fibercrete Covers are rated for 200 lbs./ft²

POLYMER COVER	FIBERCRETE® COVER	COVER WIDTH "W"	COVER LENGTH "L"	RIB WIDTH "RW"	RIB WIDTH "RW2"
P2630 (19.5)	F2630 (19.5)	26"	30"	19.5"	
P3024 (23.5)	F3024 (23.5)	30"	24"	23.5"	
P3030 (23.5)	F3030 (23.5)	30"	30"	23.5"	
P3230 (25.5)(19.5)	F3230 (25.5)(19.5)	32"	30"	25.5"	19.5"
P3624 (23.5)	F3624 (23.5)	36"	24"	23.5"	
P3624 (29.5)	F3624 (29.5)	36"	24"	29.5"	
P3630 (29.5)	F3630 (29.5)	36"	30"	29.5"	
P4220 (35.5)(29.5)	F4220 (35.5)(29.5)	42"	20"	35.5"	29.5"
P4224 (35.5)	F4224 (35.5)	42"	24"	35.5"	
P4620 (39.5)	F4620 (39.5)	46"	20"	39.5"	
P4824 (35.5)	F4824 (35.5)	48"	24"	35.5"	
P5220 (45.5)(39.5)	F5220 (45.5)(39.5)	52"	20"	45.5"	39.5"
P5420 (47.5)	F5420 (47.5)	54"	20"	47.5"	

MITERED & SPECIAL LENGTH COVERS

Due to the complexity of many trench systems, the need for special length or mitered covers is sometimes inevitable. Concast can design these custom covers and ship them to the job site; ready for installation.

PART NUMBERING CONVENTION: XLW-H(RW)

"X" - Cover Material

- P= Ped Rated Polymer
- HTP - Traff Rated Polymer
- F = Fibercrete®
- C = Concrete
- A = Aluminum

"W" - Cover Width

"L" - Cover Length

"RW" - Rib Width

Drop the "RW" if no rib is needed.

Drop the "H" for Fibercrete® or Polymer covers that are 1.25" high.

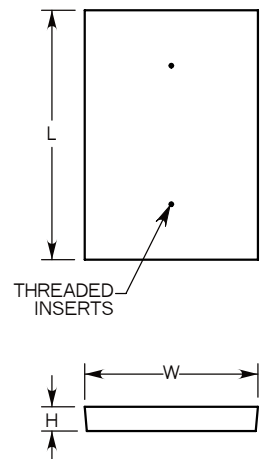
Benefits:

- Replacement covers are ideal for pour in place trench systems.
- The charts list some of the common sizes for pedestrian rated covers; but they can also be designed to meet AASHTO H-10, H-20, and H-40 Traffic Ratings for road crossing applications.
- Polymer, Fibercrete® and Concrete covers can be colored and/or stamped.
- Polymer & Fibercrete® covers are lightweight, high strength, and can usually be lifted by one person.
- Cover layout drawings are available upon request.
- Concrete covers utilize threaded inserts for machine assisted lifting.

TRAFFIC RATED REPLACEMENT COVERS

POLYMER COVER	CONCRETE COVER	COVER WIDTH "W"	COVER LENGTH "L"	COVER HEIGHT "H"
HTP2436-3	C2436-3	24"	36"	3"
HTP3636-3	C3636-3	36"	36"	3"
HTP3648-3	C3648-3	36"	48"	3"
HTP3672-3	C3672-3	36"	72"	3"
HTP4848-3	C4848-3	48"	48"	3"
HTP4872-3	C4872-3	48"	72"	3"
HTP6060-3	C6060-3	60"	60"	3"

See www.concastinc.com/custom_covers for more details; including drawings of custom covers in PDF format and cover design worksheets for download.



Custom Covers



SEALANT



Vulkem polyurethane sealant is colored concrete gray and can be ordered under Concast P/N: 8004. It is delivered in tubes and is designed for use on poured and precast concrete surfaces. Vulkem 116 has demonstrated superior primerless adhesion to porous substrates for over 30 years and is the sealant of choice for commercial industrial expansion joints.

PK-1 Patch Kit:

PATCH KITS

- Used for cosmetic repairs.
- Kit is complete with everything you need for small concrete repairs, including patching compound, bucket, and a trowel.



PK-2 Patch Kit:

- Ideal for patching holes in non-structural concrete sections.
- Kit consists of a large Fibercrete® patch sheet (1/2" thick by 12" sq.) which is cut to size, and then a construction adhesive or concrete screws are used to attach the patch over the hole.



PK-36, PK-69, & PK-912 PatchKwik Kits

- Easy to apply, self-adhesive fiberglass patch that is UV light activated. Available in 3 sizes.
- Spray paint can be ordered from Concast in gray or green. Part numbers are PK-Gray & PK-Green respectively.
- More detail [online](#).



GUIDE POSTS & SAFETY CHAIN

Guide posts and chain provide protection for your pre-cast flat pads by blocking off vehicular traffic or defining a road way. A hard, yellow plastic exterior ensures that the color will withstand years of environmental exposure like UV rays and heat. The posts are available either hollow, or concrete filled with steel rebar reinforcement. A 3/8-16 UNC threaded insert is located at the top of each post for securing optional safety chain. See [more online](#).



Post, Rope & Chain Part Numbers	Connection Hardware Part Numbers
8005Y-4F	9001G
8005Y-4H	9001SS
8005Y-7F	9001Z
8005Y-7H	9001G-J
8007	9001SS-J
8007Y-3	9001ACC
8007SG	HHB.38-1.5
ROPE-5-BK	WSR.38-1
ROPE-5-YW	8007SG-CL
	ROPE-CLAMP-625
	SHSS
	SHPY-3



Cover Specifications

GENERAL SPECIFICATIONS FOR REPLACEMENT COVERS

1. TECHNICAL SCOPE

- 1-A.** These specifications cover any precast Polymer, Fibercrete® (G.F.R.C.) and/or concrete cable trench system manufactured by Concast Incorporated in Zumbrota, Minnesota. The manufacturer must have experience in design and fabrication of these products and also the facilities for fabricating them with the quality specified herein and without delay to the agreed upon schedule.
- 1-B.** The replacement covers shall be designed and constructed to provide a serviceable life of 35 years and warranted for 5 years when installed outdoors in full sunlight and without any protection from the weather at any location in the continental United States or Canada.
- 1-C.** The Supplier shall design, construct, perform dimensional and quality control tests, and prepare the covers for truck shipment. Shipping and delivery responsibilities shall be defined in the project specific purchase documents. The Supplier shall provide all necessary documentation as stated in this specification.

2. DIMENSIONS AND DESIGN

- 2-A.** Drawings shall be made available for engineering approval and field installation. Final drawings will include individual details. Electronic individual component drawings in PDF format are available upon request.
- 2-B.** The tolerances of the dimensions of each cover shall not exceed $\pm 1/8"$. These tolerances apply to the components when ready for shipping, when set on a flat and level surface with no loads applied to it.
- 2-C.** Fiber and steel reinforced concrete or polymer concrete components shall be non-flammable.
- 2-D.** The precast components are designed to conform to requirements stated in ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".
- 2-E.** Provisions, such as cast-in threaded inserts, must be offered for lifting traffic rated trench covers. Mounting holes must be adequately reinforced to avoid damaging the cover, and to provide an ultimate strength of at least 5 times the part weight when the unit is lifted in accordance with the manufacturer's instructions.

3. PERFORMANCE AND MATERIALS

- 3-A.** Cement shall conform to the requirement of ASTM C150 - Type I, II or ASTM C595 - Type IL.
- 3-B.** Course and fine aggregates shall conform to ASTM C33 "Specification for Concrete Aggregates".
- 3-C.** Preparation of concrete shall conform to ASTM C94 "Specification for Ready-Mix Concrete" & ACI 304 "Guide for Mixing, Transporting and Placing Concrete".
- 3-D. LAY-UP GFRC - FIBERCRETE®**
 - 3-D.1** Composed of cement mortar reinforced by alkali resistant glass fiber, and deformed high tensile welded wire. It is fabricated via the Concast spray lay-up method which incorporates a minimum of 4 percent volume A.R. glass fibers.
 - 3-D.2** Conforms to AIA Masterspec Section 03491 for Glass Fiber Reinforced Concrete and quality control procedures per PCI# MNL-130-91.



3-E. PREMIX GFRC - FIBERCRETE®

- 3-E.1 Composed of cement mortar reinforced by alkali resistant glass fiber, and a deformed prefabricated high tensile welded steel wire. It is fabricated via casting into steel forms.
- 3-E.2 A.R. Glass is required to prevent glass deterioration if in contact with any poured cement or grout foundation.
- 3-E.3 Shall obtain a minimum compressive strength of 6000 PSI at 28 days of age.

3-F. MICRO-CONCRETE

- 3-F.1 Precast concrete/polymer trench components shall be cast into steel forms.
- 3-F.2 Concrete shall contain 6% entrained air (plus or minus 1%)
- 3-F.3 Shall obtain a minimum compressive strength of 7500 PSI at 28 days of age.

3-G. REINFORCEMENT

- 3-G.1 Steel reinforcing bars shall conform to ASTM A615/A615M-16 "Standard Specification for Deformed and Plain Carbon-Steel Bars for Reinforcement".
- 3-G.2 Steel reinforcing wires shall conform to ASTM A496 "Specification for Steel Wire, Deformed for Concrete Reinforcement".
- 3-G.3 Steel reinforcing weld wire cages shall conform to ASTM A497 "Specification for Steel Welded Wire Fabric, Deformed for Concrete Reinforcement".

3-H. With equipment installed; the covers shall be capable of withstanding temperature variations of -40° Fahrenheit to 149° Fahrenheit without cracking, splitting, or otherwise deforming. Material shall have been tested and conform to ASTM C666/C666M-03. Relative dynamic modulus - less than 5% change. Mass change - less than 0.25%.

3-I. Fire Resistance: Per ASTM E-84 surface burning test must provide Class A level with a flame spread index of 0 and smoke developed index is also 0.

3-J. Chloride Ion Penetrability per AASHTO T 277-15 and ASTM C1202-12 shall be moderate.

3-K. When required, site-specific, PE stamped, seismic calculations shall be provided.

3-L. Concrete properties will vary depending upon the particular formulation of the concrete mix design. Customized properties can be achieved by using nonstandard ingredients, by changing or adding reinforcements, and by tailoring the overall mix design.

3-M. METAL COMPONENT

3-M.1 All galvanized steel covers, hardware, and embedments shall meet the following requirements:

- Steel Deck Plating - ASTM A786
- Steel Sheet - A1011 HSLAS Gr 50
- Steel Angles & Flats - ASTM A-36
- Galvanized Covers - ASTM 123
- Galvanized Hardware - ASTM 153

3-M.2 All stainless steel hardware and embedments shall meet the following requirements:

- Stainless Steel Angles & Flats Type 304 - ASTM A276
- Stainless Steel Sheet Type 304 - ASTM A-240



Cover Specifications

3-M.3 All aluminum covers, hardware, and embedments shall meet the following requirements:

- Aluminum Flats 6061-T6511 - ASTM B22
- Aluminum Sheet Smooth 5052-H32 - ASTM B209
- Aluminum Deck Plating 3003 - ASTM B209 or 6061 - ASTM B632
- Aluminum Angles 6061-T6 - ASTM B308
- Aluminum Channels 6061-T6 - ASTM B308

3-N. POLYMER CONCRETE

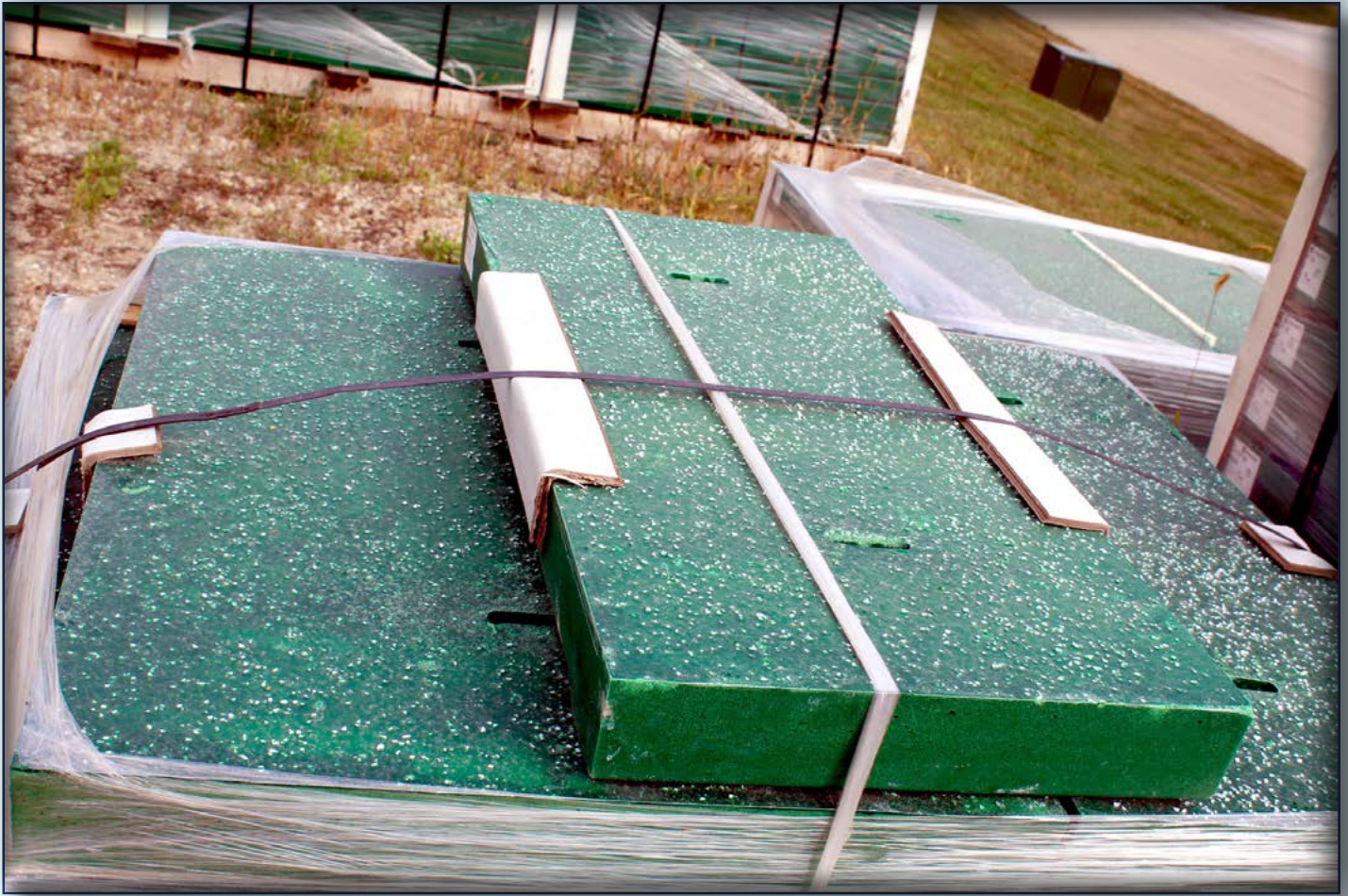
3-N.1 All polymer concrete covers shall meet the following requirements:

• Compressive Strength	ASTM C39	Min: 11,000 psi
• Tension Strength	ASTM C307	Min: 2000 psi
• Flexural Strength	ASTM C580	Min: 3,700 psi
• Absorption	ASTM C97	Max: .09%
• Rate of burning	ASTM D635	Classified HB
• Freeze/thaw resistance 1000 cycles	ASTM C580	Durability factor at 300 cycles (%) - 100
• Chemical & Stain Resistance	ASTM D1308	
Sodium Chloride 5%	ASTM D1308	No visual effect
Sulfuric Acid 0.1N	ASTM D1308	No visual effect
Ammonium Hydroxide 28%	ASTM D1308	No visual effect
Potassium Hydroxide 20%	ASTM D1308	No visual effect
Calcium Chloride 5%	ASTM D1308	No visual effect
Sodium Hydroxide 0.1N	ASTM D1308	No visual effect
Ethyl Alcohol 100%	ASTM D1308	No visual effect
Acetic Acid 5%	ASTM D1308	No visual effect
Nitric Acid 30%	ASTM D1308	No visual effect
Hydrochloric 0.2N	ASTM D1308	No visual effect

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REPLACEMENT COVERS



CONCAST

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