

Welcome to Kenco Plastics

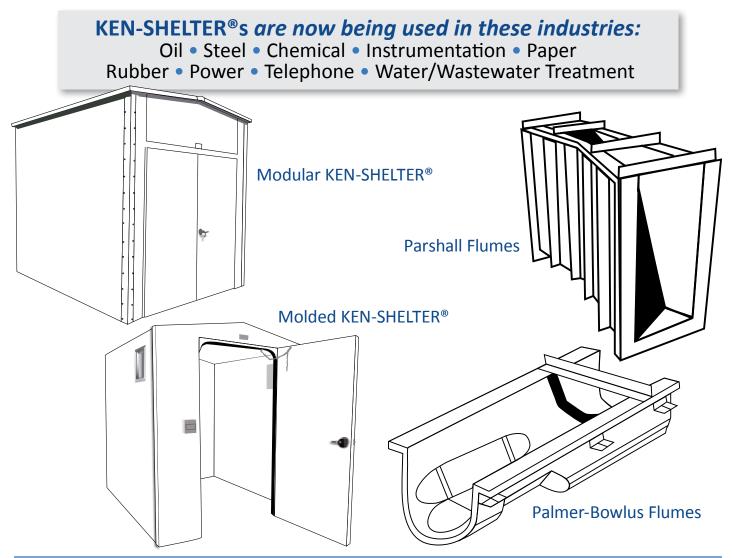
Welcome to Kenco Plastics.

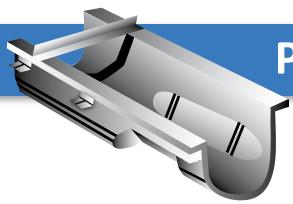
Welcome to Kenco Plastics, manufacturer of KEN-SHELTER®, all weather fiberglass shelters, enclosures, Parshall & Palmer-Bowlus flumes, insulated panels, freezer & refrigerator doors.

Kenco Plastics Company is a manufacturer of both molded and modular fiberglass buildings and enclosures. Kenco buildings, or KEN-SHELTER®s, have been used in a wide variety of industries from wastewater treatment to utility power plants to the railway system. KEN-SHELTER®s have housed generators, pumps, metering equipment, and much more. They also have functioned as temporary, on-site office facilities. KEN-SHELTER®s are for any setting in which corrosive elements are present. KEN-SHELTER®s provide an entirely non-corrosive environment.

The molded KEN-SHELTER® can be purchased in a variety of set sizes, while the modular KEN-SHELTER® is completely customizable. Accessories within the buildings are limitless. The buildings can be delivered completely pre-wired for any electrical components required. The Kenco Plastics sales department is eager and willing to work with you to develop a building that specifically accommodates your needs!

Kenco Plastics is also a manufacturer of Parshall and Palmer-Bowlus flumes. For available sizes or questions regarding these products please contact Kenco Plastics.





Palmer-Bowlus Flumes

Reinforced Fiberglass Polymer

Permanent Flumes • Insert/Invert Flumes • Cutback/Exit Flumes

Lenco Palmer-Bowlus flumes are designed and manufactured to meet or exceed the needs of the wastewater and chemical industry. Manufacturing fiberglass products and providing our customers quality service since 1954, Kenco Plastics has developed an enviable reputation. Our flumes include features and benefits such as the following:

- The Palmer-Bowlus trapezoidal throat design is used which assures a high velocity critical flow, translating into minimal flow restriction, low energy loss and better measuring accuracies at both low flow and peak capacity.
- The smooth gelcoated fluid contact surfaces decreases friction and prevent solids buildup.
- All flumes are made with chopped and sprayed fiberglass (minimum 30% content by weight) and reinforced polyester materials assuring a long maintenance free performance.

- A one-piece molded construction makes installation quick, easy and cost effective.
- Integral 2 1/2" flanges, anchor clips and right angle tie-bars are permanently attached for added strength and rigidity during shipping, installation and usage.
- A wide selection of industry standard optional measuring and interface equipment are available.
- All components are made with corrosion resistant materials for maximum application performance.

Sizes, Capacities & Weights							
Flume Size "D" Dimension	Approximat *CFS	Head at Approx. Max. Discharge					
4"	0.12	0.07	54	3.0 in.			
6"	0.30	0.19	132	4.2 in.			
8"	0.69	0.45	310	6.0 in.			
10"	1.12	0.72	502	7.2 in.			
12"	1.67	1.08	752	8.4 in.			
15"	3.09	1.99	1385	10.8 in.			
18"	4.61	2.98	2071	12.6 in.			
21"	7.04	4.55	3161	15.0 in.			
24"	9.47	6.10	4248	16.8 in.			
27"	13.09	8.44	5873	19.2 in.			
30"	16.52	10.66	7413	21.0 in.			
36"	29.97	19.37	13451	27.0 in.			
42"	43.77	28.29	19645	31.4 in.			

Permanent	Insert/Invert	Exit/Cutback
10 lb.	7 lb.	5 lb.
15 lb.	10 lb.	8 lb.
20 lb.	15 lb.	12 lb.
25 lb.	20 lb.	17 lb.
33 lb.	25 lb.	20 lb.
50 lb.	33 lb.	30 lb.
75 lb.	50 lb.	45 lb.
125 lb.	75 lb.	65 lb.
150 lb.	90 lb.	80 lb.
	110 lb.	100 lb.
	130 lb.	115 lb.
	175 lb.	160 lb.
	200 lb.	185 lb.

Shipping Weights



^{*}Permanent flume only

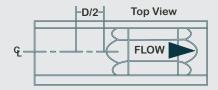
Palmer-Bowlus Flumes

Specification Data

Permanent Flumes

Typically used in new construction or when it is possible to cement a flume into place between pipe ends. The upstream approach section provides for a smooth flow into the flume. Various optional accessories are sometimes required for installation.

(See the next page for details and options available)

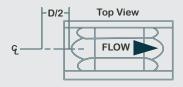


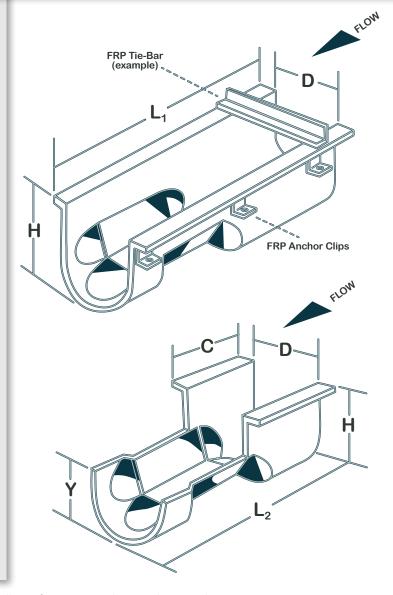
Exit/Cutback Flume

Generally exit flumes are used within the discharge pipe of a manhole. This type of flume maximizes the space for accurate upstream monitoring and sampling.

Insert Flumes

This flume is designed to be placed into an existing half section of pipe. The O.D. of this flume should fit the I.D. of the pipe section.





Note: Dimensions are provided for reference only. All specifications are subject to change without notice.

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D	D/2	L_1	L ₂	Н	R	Υ	С	T ₂
4"	2"	17"	10"	6"	2/3"	1 13/16"	4 5/8"	3/16"
6"	3"	25"	14"	8"	1"	2 13/16"	6 5/8"	3/16"
8"	4"	33"	18"	10"	1 1/3"	3 13/16"	8 5/8"	3/16"
10"	5"	41"	22"	12"	1 2/3"	4 13/16"	10 5/8"	3/16"
12"	6"	49"	26"	14"	2"	5 13/16"	12 5/8"	3/16"
15"	7 1/2"	61"	32"	17"	2 1/2"	7 5/16"	15 5/8"	3/16"
18"	9"	73"	38"	20"	3"	8 13/16"	18 5/8"	3/16"
21"	10 1/2"	85"	44"	23"	3 1/2"	10 5/16"	21 5/8"	1/4"
24"	12"	97"	50"	26"	4"	11 13/16"	24 5/8"	1/4"
27"	13 1/2"	109"	56"	29"	4 1/2"	13 5/16"	27 5/8"	1/4"
30"	15"	121"	62"	32"	5"	14 13/16"	30 5/8"	1/4"
36"	18"	145"	74"	38"	6"	17 13/16"	36 5/8"	5/16"
42"	21"	169"	86"	44"	7"	20 13/16"	42 5/8"	5/16"

Palmer-Bowlus Flumes

H 30° T₂

T₂ = Wall Thickness

Options

- Embedded Staff Gauge: Calibration units 1" and 1/4" increments
- Stilling wells in 12", 10", 8" and 6" I.D. can be supplied attached. Material: Fiberglass
- Ultrasonic level sensor instrumentation support bracket. Material: Stainless Steel
- Bubbler tube, insert molded and fitted to connect with standard flow meter tubing.
 Material: Stainless Steel
- NPT connections available for remote stilling well attachment. Material: Fiberglass
- 2 1/2" wide standard end flanges. Material: Fiberglass
- Bulkheads available for flumes smaller than adjoining pipe. Material: Fiberglass
- Wide variety of adapters for inlet and outlet pipeline connections. Material: Fiberglass

Customized Flumes

- Recessed cavities can be molded for below surface mounting of sensing instruments.
- High-Temp and chemical resistant fiberglass polyester resins are available.
- Special flume walls with thicker fiberglass laminations are available.

Engineering Details

Head vs. Flow Sizing

For measurement accuracy, use flume sizes to match actual flows. Sizing to nominal pipe size is not always correct. Optimum flow readings are obtained by selecting a flume size that has flow rates between Maximum and Minimum Discharge rates. Typically oversized flumes reduce the accuracy of the flow projections.

When the pipeline size is larger than the flume, the approach section of the permanent flume is needed to smooth the flow before it reaches the point of measurement.

Pipeline Design

Incoming flows should be non-turbulent and be lower than the velocity in the throat of the flume. The upstream pipeline grade should be designed to be equal to or less than 2%.

Downstream fluid depths must be less than 90% of the upstream depth. Any hydraulic jumps must not occur in the flume throat but downstream from the flume throat.

A depth of flow measuring device should be located at a point equal to 1/2 the diameter of the pipe, upstream from the flume entrance.



Rigid 1-Piece Parshall Flumes

- Rigid self-supporting design for metering liquids in open channels.
- Smooth one-piece construction prevents debris build-up and reduces head loss.
- Virtually unlimited life in the measuring of sewage and industrial wastes.
- Dimensions per U.S. Dept. of Interior's Water Measurement Manual.
- Our mid-American location can reduce your shipping costs.
- · Fast delivery on most sizes.

Kenco Fiberglass Parshall Flumes are made of fiberglass reinforced polyester resins laid up over white isophthalic gel-coat. They are of a rigid 1-piece construction and are especially well suited for measuring liquids containing solids that settle under gravity head conditions. The smooth surface and internal flow lines help reduce faulty measuring that occurs with the accumulation of debris. The integral reinforcing ribs and extruded FRP angles which are bolted to the top flanges aid in maintaining dimensional integrity during shipment and installation. Fiberglass anchor clips are provided to help secure unit in concrete.

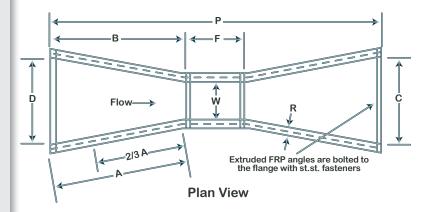
Kenco Flumes are provided with 2 1/2" wide (1 3/4" on 2" flumes) flanges on the bottoms and sides of the approach and discharge ends, and on top.

Optional Equipment Includes:

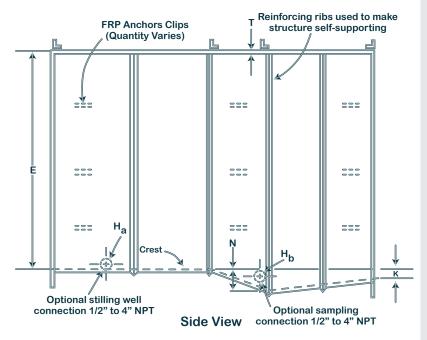
- Embedded FRP Staff gauges calibrated in feet, tenths and hundredths of a foot or inches and 1/4" increments.
- Stainless steel transducer brackets.
- Attached FRP stilling wells, 6", 8", 10" or 12" ID.
- 1/2" to 4" stilling well and/or sampling connections (fiberglass or stainless steel).
- 1/8", 1/4", 1/2", stainless steel bubbler tubes.
- Cavities in floor and/or sidewalls for customer supplied and installed instrumentation.
- End Adaptors.

Kenco Flumes can be modified to meet most any need, i.e. without end transition piece, raised and lowered sidewalls, flange extensions, additional wall thickness, etc. Nested flumes are also available.

Made of tough, maintenance-free reinforced fiberglass for virtually unlimited life and top performance.



Weights & Capacities								
Throat Width	Weight (pounds)	Shipping Weight (pounds)	Free- Flow Discharge (Max MGD)	Max. GPM	Approx. Max. Head (inches)			
2"	35	45	0.23	162	8			
3"	45	55	1.20	834	18			
6"	65	75	2.52	1754	18			
9"	85	100	5.73	3980	24			
12"	175	200	10.40	7225	30			
18"	185	220	15.89	11040	30			
24"	240	300	21.39	14855	30			
36"	310	400	32.57	22619	30			
48"	420	510	43.88	30473	30			

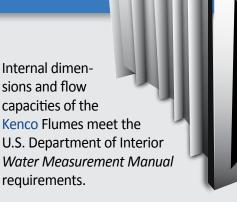


Ordering Information

When placing an order please specify:

- A. Size of throat width.
- B. Staff gauge calibration increments and location.
- C. Stilling well size and location.
- D. Stilling well or sampling connection size, type and location.
- E. Any other optional equipment; with required dimensions and locations.

Note: Locations are to be specified as left or right hand side looking downstream. (See drawing #KM-0018-B.)



Sample Specifications:

A Molded Fiberglass Flume shall be furnished and installed in the flume channel. The Flume shall be a one piece, self-supporting unit fabricated of fiberglass reinforced polyester resin containing no less than 30% glass fiber. The laminate to be uniformly laid up over white isophthalic gel-coat and be no less than the "T" dimension for stated size. The flow surfaces to be satin smooth and the unit to have a throat width of ______ inches. Flume shall be provided with reinforcing ribs, removeable cross bracing (FRP angles) at top and anchor clips molded to exterior surface. Flume shall have 2 1/2" wide (1 3/4" on 2" flumes) flanges all around. Optional equipment to include:

Flume shall be manufactured by Kenco Plastics Company, Inc., Lewisburg, TN.

	Dimensional Data											
W	Α	2/3A	В	С	D	Е	F	Р	K	N	R	Т
2"	1'4 5/16"	10 7/8"	1'4"	5 5/16"	8 13/32"	9"	4 1/2"	2'6 1/2"	7/8"	1 11/16"	1 3/4"	3/16"
3"	1'6 3/8"	1'1/4"	1'6"	7"	10 3/16"	2′0″	6"	3'0"	1"	2 1/4"	2 1/2"	3/16"
6"	2'7/16"	1'4 5/16"	2′0″	1'3 1/2"	1'3 5/8"	2′0″	1′0″	5′0″	3"	4 1/2"	2 1/2"	3/16"
9"	2'10 5/8"	1'11 1/8"	2'10"	1′3″	1'10 5/8"	2'6"	1′0″	5′4″	3"	4 1/2"	2 1/2"	3/16"
1′0″	4'6"	3'0"	4'4 7/8"	2′0″	2'9 1/4"	3′0″	2′0″	9'4 7/8"	3"	9"	2 1/2"	1/4"
1'6"	4'9"	3'2"	4'7 7/8"	2'6"	3'4 3/8"	3'0"	2′0″	9'7 7/8"	3"	9"	2 1/2"	1/4"
2′0″	5'0"	3'4"	4'10 7/8"	3′0″	3'11 1/2"	3'0"	2′0″	9'10 7/8"	3"	9"	2 1/2"	1/4"
3′0″	5'6"	3'8"	5'4 3/4"	4'0"	5′1 7/8″	3'0"	2′0″	10'4 3/4"	3"	9"	2 1/2"	5/16"
4'0"	6'0"	4'0"	5′10 5/8″	5′0″	6'4 1/4"	3'0"	2′0″	10'10 5/8"	3"	9"	2 1/2"	3/8"



Modular KEN-SHELTER®

All-weather Insulated Fiberglass Utility Shelters

Made to virtually any size Any floor plan For many special uses

KEN-SHELTER® unique panel construction allows for an unlimited variety of sizes and floor plans... able to accommodate a wide range of optional equipment.

KEN-SHELTER®s are now being used in these industries: Oil • Steel • Chemical (safety showers) • Instrumentation • Paper • Rubber • Power • Telephone • Water/ Wastewater Treatment

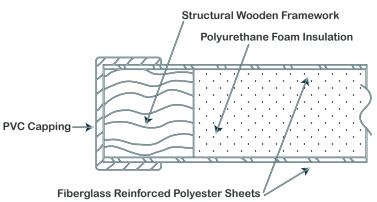
KEN-SHELTER® applications include:

Chlorination & Sampling Equipment Buildings
• Monitoring Stations • Pump and Valve
Enclosures • Analyzer Shelters • Electronic
Equipment Houses • Office Facilities at
Remote Jobsites • And Many Other Uses

KEN-SHELTER®s are specifically designed to protect expensive instrumentation and equipment from most any type of environment.



KEN-SHELTER® Panel Construction



Design

The unique design and panel construction of the **KEN-SHELTER®** allows for an unlimited variety of sizes and floor plans. Each panel is fabricated with fiberglass reinforced polyester sheets laid over a structural wooden framework which is insulated with 1 1/2" polyurethane foam.

Thermal conductivity (K-factor) is a maximum of .14 BTU/hr/ft²/F/in. (minimum R-value of 10.9), (maximum U-value of .092). See drawings #KD-0030-C1 and KD-0031-C1 for standard construction details.

Corrosion Resistant

Each Panel is sealed with PVC capping around its perimeter. All standard hardware is non-corrosive. Various coatings are available for optional equipment if corrosion is a concern. The excellent insulating characteristics of urethane foam and protective characteristics of fiberglass make the **KEN-SHELTER®** a wise choice for housing your equipment.

Maintenance

Each **KEN-SHELTER**® requires minimum maintenance or service as the color is impigmented throughout the thickness of the fiberglass sheets. The sheets contain an ultraviolet stabilizer to retard discolorization.

Quick Installation

All buildings are factory assembled and inspected before shipment. Units may be shipped assembled to reduce installation time or knocked down to reduce freight costs. In either case, each building is specifically designed for quick installation. Also, our mid-American location helps decrease shipping costs.

	Standar	d Sizes	
Width (+1) X	Basic Building	Assembled	Knocked-Down
Depth	Weight (lbs.)	Bldg. s/skid &	Crated Bldg.
(feet x feet)		crating (lbs.)	(lbs.)
4 x 4	390	440	490
4 x 6	485	540	600
4 x 8	570	630	695
4 x 10	675	740	810
4 x 12	765	835	915
4 x 14	870	950	1030
4 x 16	965	1055	1140
6 x 4	485	540	600
6 x 6	585	645	710
6 x 8	680	790	815
6 x 10	790	860	940
6 x 12	890	965	1050
6 x 14	1000	1085	1175
6 x 16	1095	1190	1280
8 x 4	565	625	690
8 x 6	675	740	810
8 x 8	770	845*	920
8 x 10	880	965*	1040
8 x 12	1125	1220*	1300
8 x 14	1250	1350*	1485
8 x 16	1475	1585*	1775
10 x 4	670	735	805
10 x 6	785	860	935
10 x 8	880	965*	1040
10 x 10	1140	†	1335
10 x 12	1290	†	1495
10 x 14	1440	†	1660
10 x 16	1675	†	1910
12 x 4	760	835	910
12 x 6	885	970	1045
12 x 8	990	1090*	1165
12 x 10	1265	†	1470
12 x 12	1405	†	1625
12 x 14	1565	†	1795
12 x 16	1805	†	2050
14 x 4	865	950	1025
14 x 6	995	1085	1170
14 x 8	1200	1300*	1420
14 x 10	1390	†	1610
14 x 12	1540	†	1770
14 x 14	1705	†	1950
14 x 16	1960	†	2220
16 x 4	965	1060	1140
16 x 6	1095	1200	1280
16 x 8	1220	1335*	1420
16 x 10	1515	+	1750
16 x 12	1675	†	1920
16 x 14	1965	†	2225

Standard Sizes

Standard sizes, overall exterior dimensions are shown at left. Standard height is 7'4" sloping to 7'0" at eaves or low end (7'2" inside at peak or high end sloping to 6'10"). Buildings can be fabricated to nonstandard dimensions with minimal cost increase. Typically door is located in width.

KEN-SHELTER® Features:

- Corrosion-resistant fiberglass reinforced polyester construction
- 1 1/2" foam-in-place polyurethane foam insulation (closed cell), K-factor £ . 14, R-value ³ 10.9
- Virtually maintenance-free impigmented color
- Four standard colors available (white, beige, grey, almond)
- Available with peaked or sloped roof
- Shipped factory assembled or knocked down
- Fabricated to withstand 125 MPH wind loads and 30 PSF snow loads
- Unique construction allows for many variations in shelter size and design

Standard Equipment

- 3'0" x 6'4" opening-in-clear flush-fitting insulated fiberglass door with integral FRP frame
- Full-length stainless steel piano door hinge
- Neoprene sponge door seal gasket
- Keyed stainless steel cylindrical lockset
- Stainless steel threshold with neoprene gasket
- 1/2" x 2" Neoprene base mounting gasket
- Stainless steel mounting flanges prepunched on 6" centers for 1/2" diameter anchor bolts
- Four (4) cadmium plated lifting eyes

^{*} For shipping assembled via common carrier it is necessary to decrease the 8'0" dimension to 7'4".
† Kenco does not recommend shipping assembled due to substantial freight costs.



Modular KEN-SHELTER®



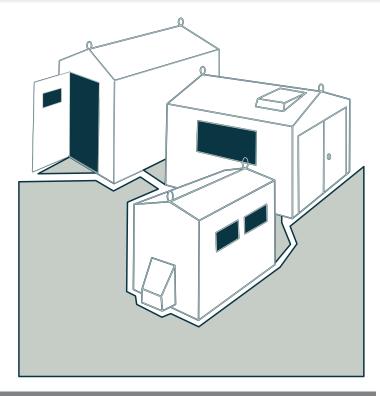
Optional Equipment

- Exhaust fans
- Louvered air intake vents
- Screened FRP outside vent covers
- Heaters
- Air Conditioners
- Light fixtures fluorescent and incandescent
- Duplex outlet receptacles
- Door-activated micro switches
- Circuit breaker panels and fuse boxes
- PVC, EMT and rigid galvanized conduit for wiring of electrical items
- Windows 12" x 16" x 1/4" Lexan door windows, stationary 1/4" Lexan wall windows, sliding acrylic wall windows, tempered and laminate glass available
- Additional doors, larger doors and double doors
- Panic hardware
- Door closers
- Interior wall partitions
- FRP floors and shelving
- Vapor-tight electrical equipment
- Explosion-proof electrical equipment
- Flame-resistant and special chemicalresistant fiberglass

Other optional equipment and engineering assistance available upon request.

Equipment Description and Sample Specifications:

and sample speemeations.	
The contractor shall furnish and install (quafiberglass reinforced polyester KEN-SHELTER®(s) as shown on the plans and in accordance with these specifications. The shelter shall have the following of exterior dimensions: (width) x (depti (height) with () sloped or (_) peaked rough (height) with (_) sloped or (_) peaked rough (_) knocked-down. Shelter shall include stainless mounting flanges, prepunched on 6" centers for 1/diameter anchor bolts. Shelter to be insulated with 1 1/2" foamed-in-place polyurethane (2 pounds peacubic foot in density). Thermal conductivity of shelf (K-factor) to be maximum .14BTU/hr/ft²/°F/in. Flush door to be () 3'0" x 6'4" standard or (_) x, open-in-clear, and shall be provided with continuous stainless steel piano hinge, stainless steely indrical lockset, plated safety stop chain, neopred door seal gasket and stainless steel threshold. All hardware to be non-corrosive. Shelter shall be (_) white or (_) with color impigmented through fiberglass. Four cadmium plated lifting eyes provide roof. Optional equipment shall include:	verall h) x pof. steel 2" ter n eel ene door





EC

ECS

Industrial Fiberglass Buildings

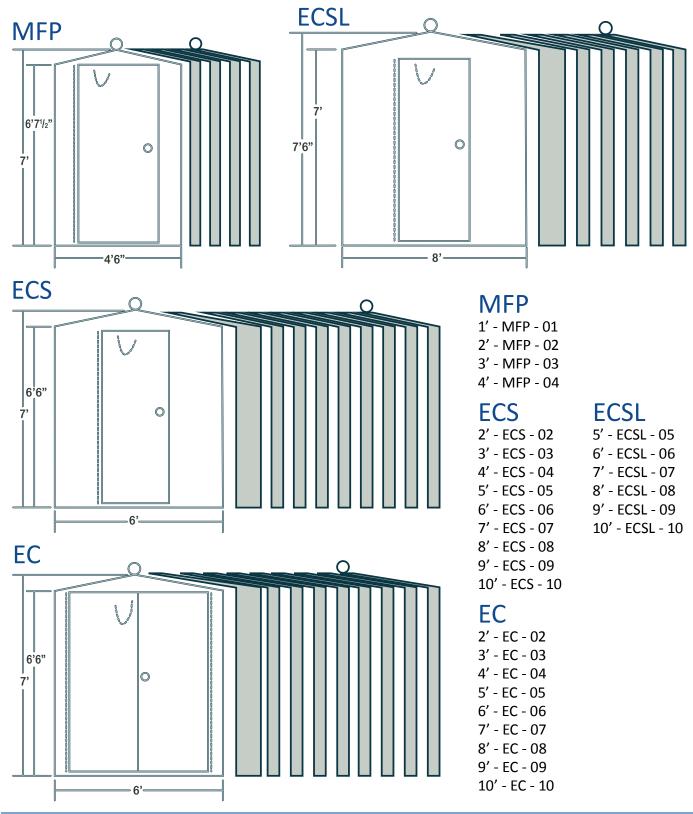
KEN-SHELTER® is the name to trust for your shelter needs. Since 1954 producing tough one-piece fiberglass reinforced (FRP) buildings has been a specialty of the Kenco Plastics Company. KEN-SHELTER®s are engineered to protect your equipment in the harshest natural and man-made environments. A KEN-SHELTER® will always be the best investment when you need to protect your equipment from nature's aggressive heat, sun, wind, snow and moisture, as well as man-made corrosive worksites.

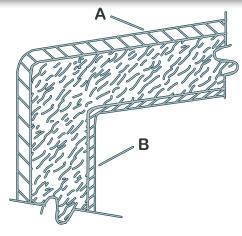
KEN-SHELTER®s to protect:

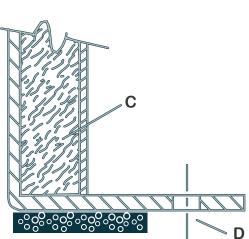
- Pollution Monitoring Equipment
- Field Instruments
- Chlorination Equipment
- Communication Electronics
- Emergency Response Equipment
- Feed Control Systems
- Corrosive Component Storage
- Field Office
- Oil and Gas Field Test Hardware
- Safety Showers
- Water and Sanitation Pumps
- Marine Equipment



MFP • EC • ECS • ECSL Specifications and Reference Numbers







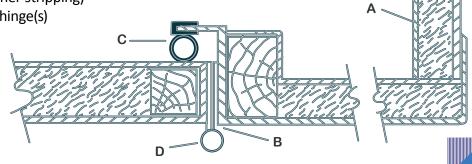
Standard Structure Features

- A 3/16" exterior skin of fiberglass reinforced polyester with a smooth exterior surface of isophthalic gelcoat provides a corrosion resistant and maintenance free exterior
- B Interior skin of 1/16" (minimum) fiberglass reinforced polyester with a quality gelcoat finish
- C Insulation is a 1" closed-cell polyurethane slab foam Density = 1.6lbs/cf, K-factor=.14 BTU/hr/ ft²/°F/in, R-value = 7.14/in
- D Base mounting is a continuous 4" wide flange that includes a 1/2" x 2" PVC perimeter sponge gasket (bolts are not included)
 - One-piece composite structure that is shipped fully assembled
 - EC & ECS are structurally rated for 125 MPH wind loads and 30 lbs/sq ft snow loads
 - MFP are structurally rated for 150 MPH wind loads and 40 lbs/sq ft snow loads
 - Two cadmium plated lifting eyes allow for easy installation (stainless steel bolts are available)
 - Standard molded-in color: white (other colors are available upon request)

Standard Door Sizes and Features

MFP: Single Door; 2'6"w x 6'3"h, O.I.C. ECS: Single Doors available; 2'6"w, 3'0"w, or 3'6"w x 6'3"h, O.I.C. EC: Double Door; 5'4"w x 6'3"h, O.I.C. Includes safety stop chains and cane bolt for the passive door

- A Fabricated laminate design: 3/16" interior and exterior FRP walls, and 1 1/2" closed-cell polyurethane slab foam insulation
- B Flush fitting door mounts into integrally molded door jams
- C Neoprene door seal gasket (weather stripping)
- Continuous stainless steel piano hinge(s)
- Continuous stainiess steel plano ninge(s
 - Neoprene door bottom wiper gasket
- Stainless steel cylindrical lockset with keys
- Door safety "stop" chain



Custom Designs, Accessories & Options

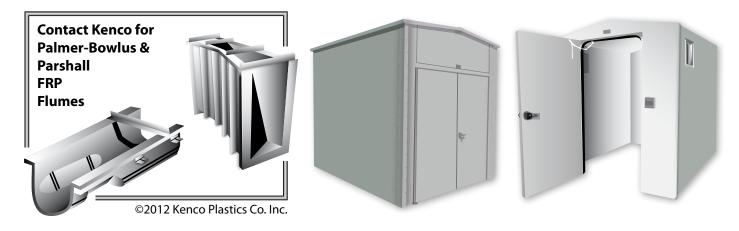
Since KEN-SHELTER®s are used by so many different industries, you may not find a specific option listed below that you need. That should not be a problem. Call Kenco Customer Service today and we will provide you the engineering assistance needed to accommodate your industry specific needs. Custom programs are just a part of the outstanding customer service you can always expect at Kenco Plastics.

- Building Windows: stationary 1/4" thick Lexan, sliding acrylic and special orders
- Interior partitions or walls
- Door Windows: Lexan or safety glass as required
- Thicker insulation for increased R-value
- Door activated micro switches for lights and/or fan
- Panic hardware, door closers and holders
- Explosion proof electrical equipment
- Interior and exterior duplex outlet receptacles
- Light Fixtures: incandescent and fluorescent
- Vapor tight electrical equipment
- Circuit breaker panels and fuse boxes
- Electrical wiring for all components available
- PVC or galvanized conduit
- Flooring (FRP) and shelving
- Heaters and air conditioners
- NEMA 4X components available upon request
- Exhaust fans and louvered air intake vents with screened FRP covers
- Custom colors are available





Ordering from Kenco



To request a quote, please visit our website at www.kencoplastics.com and submit an application, or call or fax Kenco with a request and we will be happy to respond promptly with a quote.



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