

THE HARTZELL DIFFERENCE

Building the highest quality fans in America for generations



QUALITY AT EVERY TURN.

Hartzell Air Movement exceeds the standard in the air movement industry, committed to delivering top-quality, reliable products. And our relationship with our customers, and our knowledgeable, inventive, flexible and hardworking employees are the reasons we've continued and thrived, right here in the USA, for six generations.

Customers choose Hartzell for our:

- Durability and high performance
- Low cost of ownership
- Leadership in performance testing and certification
- Advanced engineering and manufacturing processes
- Innovative design and manufacturing
- Trusted brand name

Experienced Hartzell team to assist you from design to shipping

ISO 9001:2015 Certification
AMCA Accredited Laboratory
Complete Fans and Blowers
Centrifugal Wheels
Airfoil Propellers



HARTZELL ADVANTAGES

A LIFETIME OF VALUE

- Industrial fans are field proven, 100% tested, with virtually no incident of return
- Energy efficient designs that provide a lower total cost of ownership

LEADERSHIP IN PERFORMANCE

- Products certified by AMCA that meet DOE recommended efficiencies
- Highly efficient industrial fan designs that are the quietest in the market
- Airfoil shape blades with industry leading measured efficiencies

ADVANCED ENGINEERING & MANUFACTURING

- Proven manufacturing techniques on state of the art equipment in ISO 9001:2015 registered facilities
- Engineering team utilizes the latest design tools in 3D CAD and other modeling software

CREATIVE DESIGN & MANUFACTURING TEAM

- Offering the greatest number of industrial fan design choices
- Building products to meet your rigorous application; no limiting catalog

TRUSTED BRAND NAME

- Extensive talent pool bringing over 145 years of knowledge and experience to you

5-YEAR WARRANTY

- The industry's first and only manufacturer that stands behind their products for a full 5-years



- Register your 5 year warranty
- Download your installation manual
- Order replacement parts



For more information, contact your local Hartzell Sales Representative. info@hartzell.com

HARTZELL WARRANTY

LIMITED WARRANTIES, LIMITATION OF LIABILITY, AND
LIMITATION OF LIABILITY FOR BREACH OF WARRANTY

NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS

Hartzell does not warrant that said goods are of merchantable quality or that they are fit for any particular purpose. There is no implied warranty of merchantability and there is no implied warranty of fitness.

The details of the Hartzell warranty can be found at
<http://www.hartzellairmovement.com/warranty-service>

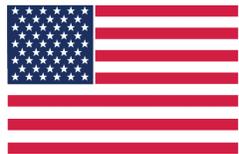
PERFORMANCE GUARANTEED

Your products are only as good as the components that go into them. We know you have high expectations, and so does Hartzell Air Movement. We know you expect the most reliable and durable industrial air movement products available, so we're holding ourselves to a higher standard. We're so sure that our products will out-perform industry standards, we're backing that promise with the industry's first – and only – five-year warranty.

At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell **FIVE-YEAR WARRANTY.**

Register for your 5year warranty at
<https://www.hartzellairmovement.com/warranty-and-parts/five-year-warranty>

Hartzell Air Movement
proudly manufactures
our fans right here in
the USA!



**MADE IN
U.S.A.**

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ADVANTAGES OF FIBERGLASS CONSTRUCTION

A variety of corrosion problems plague the water and wastewater industry. Although fans and blowers made of coated steel or metals such as stainless, Hastelloy and monel can handle some of these challenges, Hartzell's fiberglass products provide unsurpassed resistance to a great majority of corrosive elements at a cost substantially below that of corrosion resistant metals.

ADVANTAGES

✓ FIBERGLASS OFFERS SUPERIOR CORROSION RESISTANT PROPERTIES

- ✓ Weighs 25% - 50% less than comparable equipment made of metal alloys
- ✓ Has an extremely high strength-to-weight ratio, stronger than steel on a per-pound basis
- ✓ Has excellent dimensional stability
- ✓ Will not become brittle at low temperatures and at -40°F laminated fiberglass will be stronger than at room temperature
- ✓ Offers a distinct price advantage over stainless and Monel (as much as 1/3 in original cost)
- ✓ Has a longer service life and requires less maintenance
- ✓ Offers weather-resistant characteristics – it will not tarnish and will never need painting
- ✓ Is extremely durable and highly resistant to impact

When optional surface veil, electrical grounding and dynamic balancing are applied, Hartzell Air Movement conforms to ASTM D4167-21 and ASTM E84-2008 Standard Specifications for Fiber-Reinforced Plastic (FRP) Fans and Blowers.

SUPERIOR CORROSION RESISTANCE

RESIN TRANSFER MOLDED



Hartzell offers the **ONLY** fiberglass wheels & propellers available in a solid, one-piece design from the mold.

- ✓ Solid, one-piece design from an RTM mold – up to 60" dia.
- ✓ Consistent wheels and propellers with 98%+ exact wheels and propellers. Only variation is in the requested finishes.
- ✓ Repeatable Process
- ✓ Available in 12" - 60" diameters
- ✓ Much stronger wheels and propellers

Hartzell's fiberglass wheels and propellers are unique in the fan and blower industry.

They are manufactured as a single fiberglass piece using a multi-section RTM mold, ensuring that each wheel and prop is aerodynamically identical and provides reliable, repeatable performance without the variability of hand-made and taped components.

The superior design is a result of a substantial investment in research, development, tooling, and manufacturing methods by Hartzell Air Movement.

Fiberglass Roof Ventilators

Hartzell Fiberglass Roof Ventilators are a practical choice for industrial applications where corrosive elements exist in fume and vapor form. They are designed and engineered to provide positive and accurate ventilation, regardless of internal plant and weather conditions.

The design utilizes a highly efficient fiberglass airfoil propeller in a heavy-duty, corrosion resistant fiberglass housing. The housing is

extremely durable and highly resistant to impact.

In addition, the units offer weather-resistant characteristics because of their fiberglass construction. They will not tarnish and will never need painting.

Standard Construction

- **Housings** – Constructed of a corrosion resistant vinyl ester resin with a Class I flame spread rate of 25 or less
- **FRP Construction** – All structural parts in the airstream are fiberglass and resin. All taped joints inside the shell or body are three layers of two ounce material. After assembly, internal surfaces are coated with two coats of resin and external parts and surfaces are given one coat of resin.
- **UV Inhibitor** – A UV inhibitor is added to the final coat of resin.
- **Shafts & Hardware** – Airstream shafts, bolts, and screws are 304 SS. Monel shafting and hardware are available as an extra-cost option for applications such as hydrochloric, hydrofluoric, or sulfuric acids, which attack stainless. Where metal is subject to attack by the corrosive elements being handled, all metal parts can be resin-coated after assembly.
- **Propellers** – are of one-piece construction, die formed of individual laminations of cloth mat plus woven roving.

For Belt Drive Units:

- **Bearing Covers** – Sealed with plastic foam tape and bolted to the bearing base.
- **Shaft Seal** – A fiberglass and neoprene shaft seal is placed where the shaft leaves the bearing cover along with a neoprene shaft slinger on the fan shaft between the propeller and seal. The seal is not gas tight.

Installation Data

In the past, the majority of plant ventilation was accomplished by sidewall ventilation. However, this type of ventilation required extensive and expensive ductwork and proved to be inferior to roof ventilation.

Roof ventilators use little valuable internal space and offer the flexibility of rearranging production equipment without reconstructing ventilation systems and moving ductwork.

Hartzell offers three types of fiberglass roof ventilators, each designed with a particular type of installation in mind, to meet the majority of industrial corrosive applications.

Series 57: Fiberglass Upblast Roof Ventilator – Direct Drive

An efficient and economical choice for general ventilation or mildly corrosive atmospheres.

Series 37: Fiberglass Upblast Roof Ventilator – Belt Drive

A heavy-duty unit with the motor out of the airstream, best suited for application where severely corrosive elements exist or where the versatility of belt drive is required. Can be located at the end of ductwork.

Series 58: Fiberglass Hooded Roof Ventilator – Belt Drive

Provides complete protection from the elements for an exhaust operation.

Plant Layout

To design the plant ventilation layout, first determine the amount of CFM required:

1. Multiply the dimensions of the ventilated area to figure the cubic feet.
2. Take the cubic feet of the ventilated area and divide by the air exchange rate to figure the amount of CFM required.

EXAMPLE:

Ventilated Area: 120' x 50' x 20'

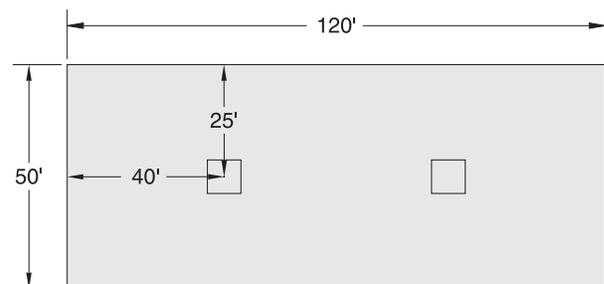
Air Exchange Rate: One change every 5 minutes

$$120' \times 50' \times 20' = 120,000 \text{ cu. ft.}$$

$$120,000 \text{ cu. ft.} \div 5 \text{ min.} = 24,000 \text{ CFM}$$

Second, determine the size and number of units needed to meet those requirements:

1. Divide the amount of CFM required by the number of units



desired (in this case, 2) to figure the capacity requirement for each ventilator.

$$24,000 \text{ CFM} \div 2 \text{ units} = 12,000 \text{ CFM}$$

Note: Symmetrical spacing should be used whenever possible; however, care must be taken to adequately ventilate particularly troublesome areas.

Options and Accessories | Series 37, 57 and 58E

Abrasive/Erosive Resistant Coating

HartKoate is an abrasive/erosive resistant coating developed by Hartzell Air Movement for application in environments where abrasive/erosive conditions may exist. HartKoate helps prevent premature deterioration of equipment in environments where uncoated fans may fail.

HartKoate is applied to a 50-60 mil thickness suitable for temperatures to 200°F.

HartKoate is particularly appropriate for use when water mist and/or abrasive particles exist in the airstream.

Contact your Hartzell representative for further details concerning the application of HartKoate coating to fiberglass fans in corrosive atmospheres.

Hi-Cor Construction

All airstream surfaces exposed to the corrosive environment will be protected with a layer of Synthetic (Nexus) surfacing veil. An additional final coat of resin will be applied for extra corrosion resistance.

When Hi-Cor construction is required, the factory should be consulted concerning the corrosive environment involved.

Electrostatically Grounded

For applications in which fiberglass products are handling gas fumes that are not only corrosive but also potentially explosive, the equipment should be specially constructed to control and remove static electricity. Interior airstream surfaces can be coated with a "carbon rich" resin coat.

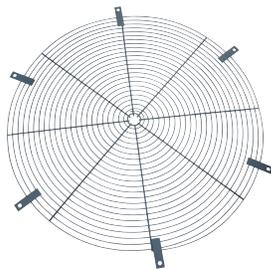
Grounding straps are secured from the side of the housing to the fan's steel base. All that remains to effectively ground the airstream is to ground the fan base at the time of installation.

ASTM D4167-21 Construction

(ASTM D4167-21, Standard Specification for Fiber-Reinforced Plastic Fans and Blowers.) For corrosive systems where ASTM construction is specified this construction option adds: synthetic veil and electrostatically conductive surface coating applied to airstream housing and impeller surfaces, special nameplates, and special final dynamic balancing to fan.

Bird Screen

An epoxy coated steel spiral guard, located on top of ventilator discharge, to keep birds and other large debris from falling into the roof ventilator.



Safety Guard

Constructed of sixteen gauge, galvanized, epoxy coated, half inch wire mesh, the safety guard protects the floor area from falling debris and the ventilator from vandalism.

Prefabricated Curbs

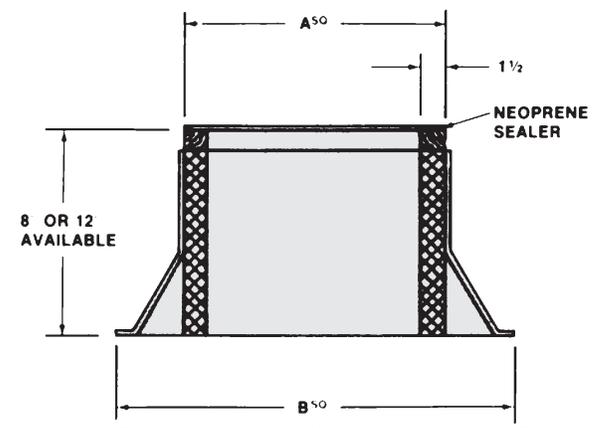
The CT-1 fiberglass prefabricated curb shown is for flat roof installation of Hartzell roof ventilators. The curb is designed for metal, concrete or wood roof decks that are not surface insulated. The curb is available either 8" or 12" high.

A Model IRC-1 prefabricated curb constructed of galvanized steel is also available with identical features as Model CT-1. Galvanized models can be furnished with epoxy coating. Aluminum construction also available.

All prefabricated curbs can be furnished for slope or peak bases. Prefabricated curbs are designed to support the weight of the fans cataloged herein, and attachments not exceeding over 100 additional pounds in a 40 mph wind. Nonstandard curb construction is available.

Features:

- Nailer Strip – strip facilitates fastening the ventilator to the curb.
- Glass Fiber Insulation - a rigid 1½" thick 3 lbs. density liner eliminates condensation problems.
- Neoprene Sealer – 1/4" strip.
- Construction: CT-1 - Isophthalic resin, no pigmentation
IRC-1 - Galvanized steel (18 ga.)
IRC-1 - Aluminum (.063 ga.)



Options and Accessories *continued*

Combination Motor Cover & Belt Guard

Constructed of epoxy coated, hot rolled steel. Provides weather protection and guards the drive sheaves and belts. The covers are vented. **Series 37 and 58E only.**



Fiberglass Motor Cover

Designed to fit fiberglass roof ventilators. The cover is solid fiberglass and die-formed with injection molded louvers.

Disconnect Switch

Mounted and wired, provides safety during maintenance.

Hinged Hood

A stationary, removable, fiberglass hood is standard. Hinged construction is available for access to the fan without removing the hood. Stationary and hinged hoods are one-piece construction up to size 32" and two-piece construction from sizes 36" to 60". **Series 58E only.**



Backdraft Dampers

Backdraft dampers are available on hooded ventilators for exhaust operation only. The dampers are mounted in the hood. Two semi-circular lids open when the unit is on and close when the unit is off. When backdraft dampers are required, a hinged hood must also be used. See CFM Limitations for Damper Lid Operation chart for damper lid limits. **Series 58E only.**

CFM Limitations for Damper Lid Operation

CFM	Fan Size												
	12	16	18	20	24	28	32	36	40	44	48	54	60
Minimum*	1195	2080	2615	3210	4586	6200	8065	10175	12525	15120	17960	22890	28180
Maximum**	2726	4750	6976	7335	10475	14175	18435	23250	28630	34560	41055	52315	64410

*Minimum CFM to open lids

**Maximum CFM to prevent lid damage



The "Hartzell Experience" product trailer travels all over the U.S. and Canada exhibiting quality air moving products. Call your local sales representative to schedule a visit in your area today!

Series 37 | Upblast, Belt Drive Roof Ventilator

Series 37 Fiberglass, Upblast Roof Ventilators are heavy-duty units with the motor out of the airstream. They are best suited for applications where severe corrosive elements exist or where the versatility of belt drive is required. The unit's fiberglass duct fan and exterior-mounted motor makes it well-suited for fume exhaust.

Features:

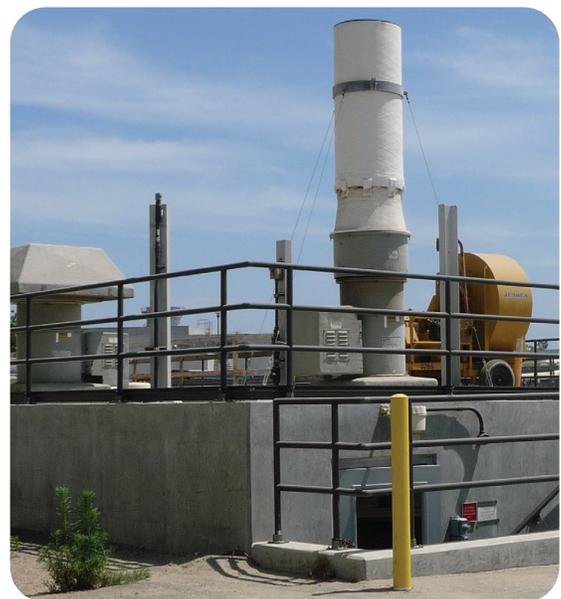
- **Sizes** – 12" to 60"
- **Performance** – 1,195 to 64,410 CFM at free air
- **Temperature** – Suitable for temperatures up to 200°F
- **Corrosion-Duty Construction** – The sturdy, three piece unit (windband, duct fan and panel) is constructed of fiberglass. All airstream hardware is stainless steel. Belts, bearings, sheaves and shaft are enclosed and protected from the airstream. The drive compartment is located on the negative pressure (suction) side of the propeller, drawing in ambient air from outside the fan and over the belts and bearings; this ensures a contaminant-free compartment.
- **Motor** – The motor is exterior mounted out of the airstream. The propeller shaft rotates in two heavy-duty bearings mounted on fiberglass supports taped to the inner shell with "T" reinforcements. Totally enclosed, fan cooled motors are standard. Special motors are available upon request.
- **Propellers** – Single piece, solid fiberglass construction
 - Sizes 12" to 48" – 6-blade, Type-FW
 - Sizes 54" and 60" – 4 and 6 blade adjustable, Type AF
- **V-Belt Drives** – Oversized for long life and continuous duty. Variable pitch through 48" fan size. Oil, heat and static resistant type.
- **Bearings** – Bearings are deep-row radial ball or roller type, self-aligning, shielded and mechanically sealed in cast iron or malleable housings. Long inner race insures even load distribution, providing a high radial and thrust load capacity. Bearings are relubricable. Minimum 50,000 hours L-10 bearing life.
- **Lubrication Tubes** – Extend from the bearings through the belt tube to the exterior of the fan housing. Allows for ease of maintenance.
- **Stack Cap** – Butterfly dampers open when the unit is on and close weathertight when unit is off. The discharge airstream prevents entry of rain or snow during operation. Fiberglass dampers are mounted on corrosive-resistant rods which turn in long-life synthetic bearings. The stack cap is designed with enough height to effectively prevent wind resistance against the operation of the ventilator.
- **Curb Panel** – Constructed of heavy-duty fiberglass, it provides a convenient method of curb mounting a roof ventilator.
- **Lifting Lugs** – Lifting lugs come standard to facilitate installation.



For performance data, please visit www.hartzellflow.com or contact your local sales representative.

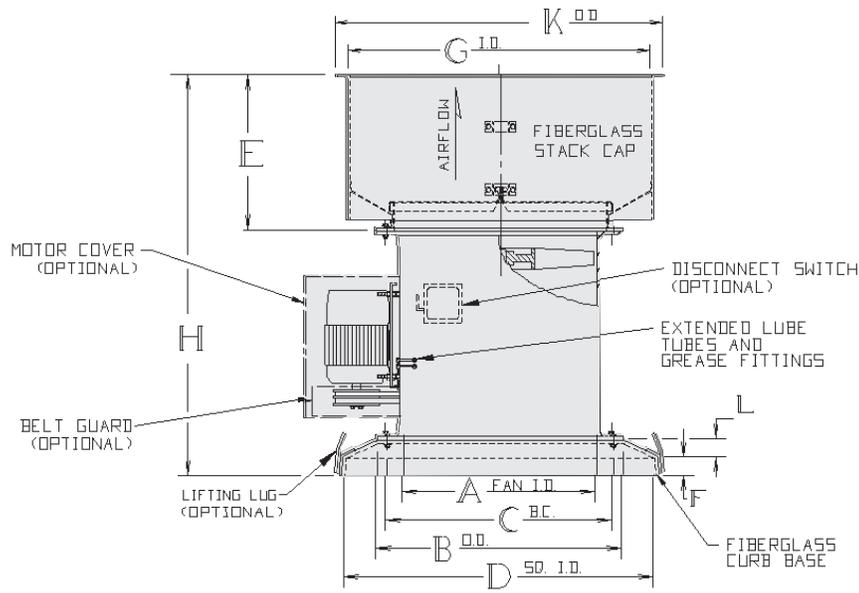


Hartzell Air Movement certifies that the Series 37, Fiberglass Upblast Roof Ventilator, shown herein is licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit www.hartzellflow.com or contact your local sales representative.



Series 37 Fiberglass Upblast Roof Ventilator

Dimensions



Principal Dimensions (inches) – Series 37

Fan Size	A	B	C	D	E	F	G	H	K	L
12	12 $\frac{1}{4}$	16 $\frac{1}{4}$	14 $\frac{1}{2}$	22	16 $\frac{1}{4}$	2	16 $\frac{1}{4}$	40 $\frac{1}{8}$	19 $\frac{1}{8}$	1 $\frac{1}{8}$
16	16 $\frac{1}{4}$	20	18 $\frac{1}{2}$	26	18 $\frac{1}{4}$	2	20 $\frac{1}{4}$	42 $\frac{1}{8}$	23 $\frac{1}{8}$	1 $\frac{1}{8}$
18	18 $\frac{1}{4}$	22 $\frac{1}{4}$	20 $\frac{1}{2}$	28	20 $\frac{1}{4}$	2	24 $\frac{1}{4}$	46 $\frac{1}{8}$	27 $\frac{1}{8}$	1 $\frac{1}{8}$
20	20 $\frac{1}{4}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	30	20 $\frac{1}{4}$	2	24 $\frac{1}{4}$	49 $\frac{1}{8}$	27 $\frac{1}{8}$	1 $\frac{1}{8}$
24	24 $\frac{1}{4}$	28 $\frac{1}{2}$	26 $\frac{1}{4}$	36	18 $\frac{1}{4}$	2 $\frac{1}{8}$	28 $\frac{1}{4}$	47 $\frac{1}{4}$	31 $\frac{1}{8}$	1 $\frac{3}{8}$
28	28 $\frac{1}{4}$	32 $\frac{1}{4}$	30 $\frac{1}{4}$	42	20 $\frac{1}{4}$	2 $\frac{1}{8}$	33	50 $\frac{1}{8}$	36 $\frac{1}{8}$	2 $\frac{1}{8}$
32	33	36 $\frac{1}{2}$	34 $\frac{1}{4}$	42	24 $\frac{1}{4}$	2 $\frac{1}{8}$	37	55 $\frac{1}{8}$	40 $\frac{1}{8}$	1 $\frac{1}{8}$
36	37	40 $\frac{1}{4}$	38 $\frac{1}{4}$	48	26 $\frac{1}{2}$	2 $\frac{1}{8}$	45	58 $\frac{1}{8}$	48 $\frac{1}{8}$	1 $\frac{3}{8}$
40	41	44 $\frac{1}{4}$	43 $\frac{1}{4}$	50	30 $\frac{1}{4}$	2 $\frac{1}{8}$	49 $\frac{1}{4}$	69 $\frac{1}{8}$	53 $\frac{1}{8}$	1 $\frac{1}{8}$
44	45	48 $\frac{1}{4}$	47 $\frac{1}{4}$	54	31 $\frac{1}{4}$	2 $\frac{1}{8}$	49 $\frac{1}{4}$	71 $\frac{1}{8}$	53 $\frac{1}{8}$	1 $\frac{1}{8}$
48	49 $\frac{1}{4}$	53 $\frac{1}{4}$	51 $\frac{1}{4}$	60	33 $\frac{1}{4}$	2 $\frac{1}{8}$	55 $\frac{1}{4}$	73 $\frac{1}{8}$	59 $\frac{1}{8}$	1 $\frac{1}{8}$
54	55 $\frac{1}{4}$	59 $\frac{1}{4}$	57 $\frac{1}{4}$	64 $\frac{1}{4}$	37 $\frac{1}{4}$	2 $\frac{1}{8}$	61 $\frac{1}{4}$	81 $\frac{1}{8}$	65 $\frac{1}{8}$	1 $\frac{1}{8}$
60	61 $\frac{1}{4}$	65 $\frac{1}{4}$	63 $\frac{1}{4}$	70 $\frac{1}{4}$	42 $\frac{1}{4}$	2 $\frac{1}{8}$	68	86 $\frac{1}{8}$	72	1 $\frac{1}{8}$

Note: Specifications are subject to change. Certified prints are available.

Series 57 | Upblast, Direct Drive, Roof Ventilator



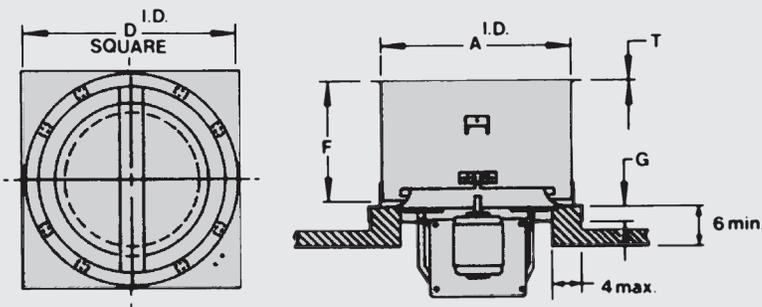
For performance data, please visit www.hartzellflow.com or contact your local sales representative.

Series 57 Upblast Roof Ventilators are an efficient, economical choice for general ventilation or mildly corrosive atmospheres. They should not be used in atmospheres where the corrosive concentration is enough to damage the motor. The design incorporates the Hartzell panel fan concept with a windband and butterfly dampers. The dampers open automatically when the fan goes on and close weathertight when the fan is shut down. During operation, the force of the discharge air effectively prevents entry of rain or snow.

Features:

- **Sizes** – 28" to 60"
- **Performance** – 7,300 CFM to 51,000 CFM at free air
- **Temperature** – Suitable for temperatures up to 180°F (Specially insulated motors are required for temperatures above 104°F.)
- **Motor Mount** – The mount is an epoxy coated, welded, steel rod assembly. Stainless steel is available as an option. Airstream hardware is stainless steel, coated with resin after assembly. The mount supports the motor below ventilator and offers minimum resistance to the airflow. The assembly bolts to the orifice panel.
- **Propellers** – Propellers are one-piece fiberglass construction and electronically balanced on unit at operating speed to ensure vibration-free operation.
 - Sizes 28" to 48" – 6-blade, Type-FW
 - Sizes 28" and 44" – Also available as 6-blade, Type-M
 - Sizes 54" and 60" – 2-blade, Type-M
- **Motors** – Motors are totally enclosed. Mill and chem are standard. Other motors are available upon request.
- **Orifice Panel** – Inlet orifice increases efficiency by minimizing air friction.
- **Windband** – Designed with the necessary height to effectively prevent wind resistance against the operation of the ventilator.
- **Dampers** – Two fiberglass semi-circular lids at the base of the windband are mounted on stainless steel rods which turn in synthetic bearings. Fiberglass lids are very durable and have a longer lid life than steel. Fiberglass also has insulation qualities, which results in less heat loss when the unit is idle during winter months. See CFM Limitations for Damper Lid Operation chart for damper lid limits.
- **Lifting Lugs** – Lifting lugs come standard to facilitate installation.

Dimensions



Principal Dimensions (in.) – Series 57

Size	28	32	36	40	44	48	54	60
A	33	37	45	49½	49½	55½	61¼	68
D	42	42	48	50	54	60	64¼	70¼
F	19½	23	25¼	29	30½	32½	36	41½
G	2¾	2¾	2¾	2¾	2¾	3¾	3¾	3¾
T	¼	¼	¼	¼	5/16	5/16	½	½

Note: Specifications are subject to change. Certified prints are available.

Series 58E | Belt Drive, Hooded Roof Ventilator

The Series 58E Fiberglass Hooded Roof Ventilator provides complete protection from the elements. The unit's belt drive configuration and exterior-mounted motor, makes it a logical choice for an exhaust application where corrosive elements exist and protection from the weather is essential.

Features:

- **Sizes** – 12" to 60"
- **Performance** – 1,260 to 63,470 CFM at free air
- **Temperature** – Suitable for temperatures up to 200°F
- **Hood** – Fiberglass construction. A stationary, removable hood is standard. Optional hinged construction is available for access to the fan without removing the hood. Stationary and hinged hoods are one-piece construction up to size 32" and two-piece construction from sizes 36" to 60".
- **Curb Panel** – Constructed of heavy-duty fiberglass, it provides a convenient method of curb mounting a roof ventilator.
- **Motor** – The motor is exterior mounted out of the airstream. The propeller shaft rotates in two heavy-duty bearings mounted on fiberglass supports taped to the inner shell with "T" reinforcements. Totally enclosed, fan cooled motors are standard. Special motors are available upon request.
- **Corrosion-Duty Construction** – Belts, bearings, sheaves and shaft are enclosed and protected from the airstream. The drive compartment is located on the negative pressure (suction) side of the propeller drawing in ambient air from outside the fan and over the belts and bearings; this ensures a contaminant-free compartment.
- **Propellers** – Single piece, solid fiberglass construction.
 - Sizes 12" to 48" – 6-blade, Type FW
 - Sizes 54" and 60" – 6-blade adjustable, Type AF
- **V-Belt Drives** – Oversized for long life and continuous duty. Variable pitch through 48" fan size. Oil, heat and static resistant type.
- **Bearings** – Bearings are deep-row radial ball or roller type, self-aligning, shielded and mechanically sealed in cast iron or malleable housings. Long inner race insures even load distribution, providing a high radial and thrust load capacity. Bearings are relubricable. Minimum 50,000 hours L-10 bearing life.
- **Lubrication Tubes** – Extend from the bearings through the belt tube to the exterior of the fan housing. Allows for ease of maintenance.
- **Construction Options** – The Series 58E (Exhauster) can be supplied in Series 58I (Intake) configuration. Contact factory for additional information.
- **Lifting Lugs** – Lifting lugs come standard to facilitate installation.

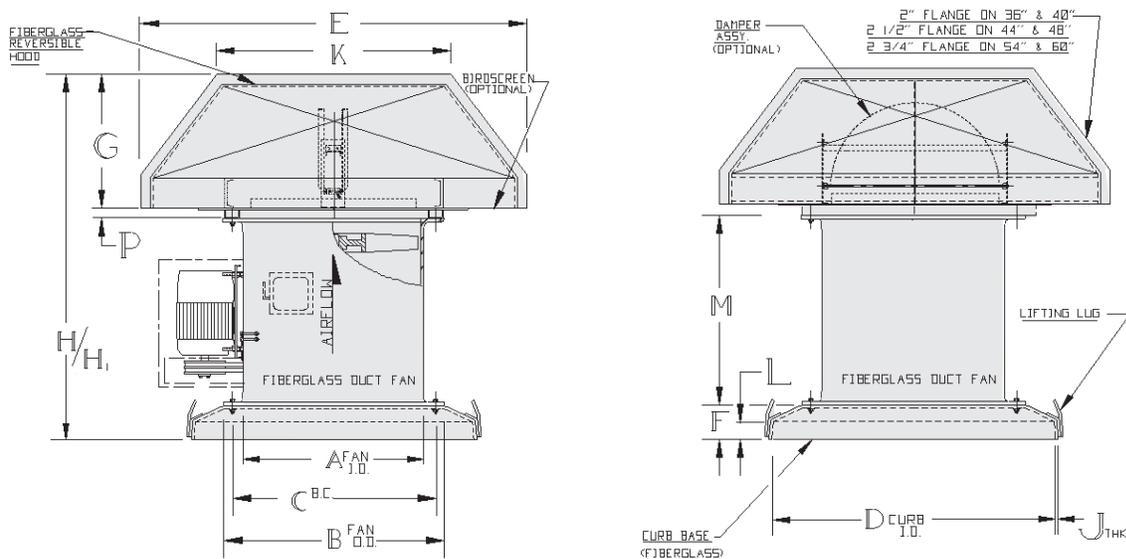


For performance data, please visit www.hartzellflow.com or contact your local sales representative.



Series 58E Fiberglass Hooded Roof Ventilator

Dimensions



Principal Dimensions (inches) – Series 58

Fan Size	A	B	C	D	E	F	G	H	H ₁	J	K	L	M	P
12	12 ⁷ / ₈	16 ¹ / ₄	14 ¹ / ₂	22	36 ³ / ₈	3 ³ / ₈	14 ¹⁵ / ₁₆	38 ⁵ / ₁₆	39 ¹³ / ₁₆	⁵ / ₁₆	22	2	20	1 ¹ / ₂
18	18 ⁷ / ₈	22 ⁷ / ₈	20 ¹ / ₂	28	36 ³ / ₈	3 ³ / ₈	14 ¹⁵ / ₁₆	40 ⁵ / ₁₆	41 ¹³ / ₁₆	⁵ / ₁₆	22	2	22	1 ¹ / ₂
24	24 ⁷ / ₈	28 ¹ / ₂	26 ³ / ₈	36	58 ¹ / ₂	4	24	53	55	⁷ / ₁₆	34 ¹ / ₂	2 ³ / ₁₆	25	2
28	28 ⁷ / ₈	32 ³ / ₈	30 ³ / ₈	42	58 ¹ / ₂	4 ³ / ₈	24	53 ³ / ₈	55 ³ / ₈	⁷ / ₁₆	34 ¹ / ₂	2 ³ / ₁₆	25	2
32	33	36 ¹ / ₂	34 ⁷ / ₈	42	58 ¹ / ₂	3 ⁹ / ₁₆	24	55 ⁹ / ₁₆	57 ⁹ / ₁₆	⁷ / ₁₆	34 ¹ / ₂	2 ¹ / ₈	28	2
36	37	40 ³ / ₈	38 ⁷ / ₈	48	76 ¹ / ₂	3 ¹⁵ / ₁₆	29 ³ / ₄	61 ¹¹ / ₁₆	63 ¹¹ / ₁₆	⁷ / ₁₆	53 ¹ / ₁₆	2 ¹ / ₈	28	2
40	41	44 ¹ / ₈	43 ³ / ₈	50	76 ¹ / ₂	3 ⁵ / ₈	29 ³ / ₄	69 ³ / ₈	71 ³ / ₈	⁷ / ₁₆	53 ¹ / ₁₆	2 ¹ / ₁₆	36	2
44	45	48 ¹ / ₈	47 ¹ / ₈	54	91 ¹ / ₂	3 ⁵ / ₈	33 ³ / ₄	73 ³ / ₈	75 ³ / ₈	⁷ / ₁₆	62 ¹¹ / ₁₆	2 ¹ / ₁₆	36	2
48	49 ¹ / ₈	53 ³ / ₈	51 ⁵ / ₈	60	91 ¹ / ₂	3 ¹⁵ / ₁₆	33 ³ / ₄	73 ¹¹ / ₁₆	76 ³ / ₁₆	⁷ / ₁₆	62 ¹¹ / ₁₆	2 ³ / ₁₆	36	2 ¹ / ₂
54	55 ³ / ₈	59 ³ / ₈	57 ³ / ₈	64 ¹ / ₄	113	3 ⁷ / ₈	39 ³ / ₄	83 ³ / ₈	86 ³ / ₈	⁷ / ₁₆	77	2 ³ / ₁₆	40	2 ¹ / ₂
60	61 ³ / ₈	65 ³ / ₈	63 ³ / ₈	70 ¹ / ₄	113	3 ⁷ / ₈	39 ³ / ₄	83 ³ / ₈	86 ³ / ₈	⁷ / ₁₆	77	2 ³ / ₁₆	40	2 ¹ / ₂

Note: Specifications are subject to change. Certified prints are available.

Call and speak to your local Hartzell Air Movement sales representative about a fiberglass roof ventilator, wall ventilator or centrifugal exhauster today!

Options and Accessories | Series 59

Abrasive/Erosive Resistant Coating

HartKoate is an abrasive/erosive resistant coating developed by Hartzell Air Movement for application in environments where abrasive/erosive conditions may exist. HartKoate helps prevent premature deterioration of equipment in environments where uncoated fans may fail.

HartKoate is applied to a 50-60 mil thickness suitable for temperatures to 200°F.

HartKoate is particularly appropriate for use when water mist and/or abrasive particles exist in the airstream.

Contact your Hartzell representative for further details concerning the application of HartKoate coating to fiberglass fans in corrosive atmospheres.

Hi-Cor Construction

All airstream surfaces exposed to the corrosive environment will be protected with a layer of Synthetic (Nexus) surfacing veil. An additional final coat of resin will be applied for extra corrosion resistance.

When Hi-Cor construction is required, the factory should be consulted concerning the corrosive environment involved.

Electrostatically Grounded

For applications in which fiberglass products are handling gas fumes that are not only corrosive but also potentially explosive, the equipment should be specially constructed to control and remove static electricity. Interior airstream surfaces can be coated with a "carbon rich" resin coat.

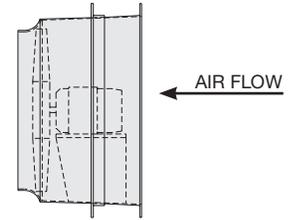
A grounding lug is provided for use at the time of installation.

ASTM D4167-21 Construction

(ASTM D4167-21, Standard Specification for Fiber-Reinforced Plastic Fans and Blowers.) For corrosive systems where ASTM construction is specified this construction option adds: synthetic veil and electrostatically conductive surface coating applied to airstream housing and impeller surfaces, special nameplates, and special final dynamic balancing to fan.

Mounting Flange

Constructed of solid fiberglass, the flange allows the fan to be mounted in the wall opening at the customer's specified depth. It is permanently mounted to the fan at the factory per customer specified location or it can be shipped loose if a location is not specified.



Shutter Mounting Boot

Constructed of solid fiberglass, the boot is molded to the fan housing at the factory, and is used to ensure proper spacing between the fan and the optional shutters.



Fiberglass Shutter

Constructed of solid fiberglass, shutters are available in end or center pivoted and either automatic, manual, or motor operated. Epoxy coated steel shutters, or shutters constructed of galvanized steel, stainless steel or aluminum are also available.

The Hartzell solid fiberglass automatic back draft damper is constructed entirely of fiberglass, minimizing corrosion problems associated with metal in the airstream. These shutters are available in standard sizes to match the Hartzell shutter mounting boot. These shutters are also available built to specified customer dimensions. Contact your local Hartzell representative for assistance.



Series FEP
Fiberglass
End- Pivoted
Automatic Shutter

Wall Ventilator Guards

304 stainless steel front guards, FRP rear guards and FRP shutter boot guards are available.

CAUTION: The drive assembly or the periphery of the blades of a fan less than seven (7) feet above the floor or working level must be guarded to be in accordance with OSHA regulations.

Performance Guaranteed



Your products are only as good as the components that go into them. We know you have high expectations, and so does Hartzell Air Movement. We know you expect the most reliable and durable industrial air movement products available, so we're holding ourselves to a higher standard. We're so sure that our products will out-perform industry standards, we're backing that promise with the industry's first – and only – five-year warranty.

At Hartzell, these are words we live by. They guide us every day. Good enough isn't how you design your products. It's not how we engineer, build and support our products — or provide ongoing service to our customers. When we looked at the industry standard two-year warranty, we knew we had to do better. And we did — by offering the Hartzell **FIVE-YEAR WARRANTY**.

Series 59 | *Fiberglass Direct Drive Wall Ventilator*

Hartzell Fiberglass Direct Drive Wall Ventilators are designed for general ventilation where corrosive elements exist in fume or vapor form. The units are manufactured out of solid fiberglass and designed to pass through a framed up wall opening as a complete assembly, either by itself, or with accessories.

Hartzell wall ventilators utilize a highly efficient, one-piece, solid fiberglass airfoil type propeller from an RTM mold. The fan housing incorporates the Hartzell Air Seal, which allows the orifice ring to overlap the propeller tips. This practically eliminates back flow of air and increases efficiency by 10% or more by minimizing air friction through the fan.

Features:

- **Sizes** – 12" to 60"
- **Performance** – 1,315 to 55,500 CFM at free air
- **Temperature** – Suitable for temperatures up to 180°F (Specially insulated motors are required for temperatures above 104°F.)
- **Unit Construction** –
 - Fan housing** – One piece molded fiberglass fan housing with solid fiberglass motor support base. Fan housing includes venturi orifice to increase efficiency and seal propeller tips.
 - Motor mounting base** – Fabricated of solid fiberglass, designed to maximize strength and minimize restrictions to air flow.
 - Propellers** – One piece fiberglass airfoil construction, electronically balanced on unit at operating speed.
- **Motors** – Totally enclosed mill and chem motors are standard. Other motors are available upon request.
- **Hardware** – Stainless Steel motor mounting hardware is standard. Monel hardware is available at an extra cost. Fiberglass accessory mounting hardware is standard stainless steel.



Hartzell Air Movement certifies that the Series 59, Fiberglass Panel Fan, Direct Drive, shown herein is licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit www.hartzellflow.com or contact your local sales representative.

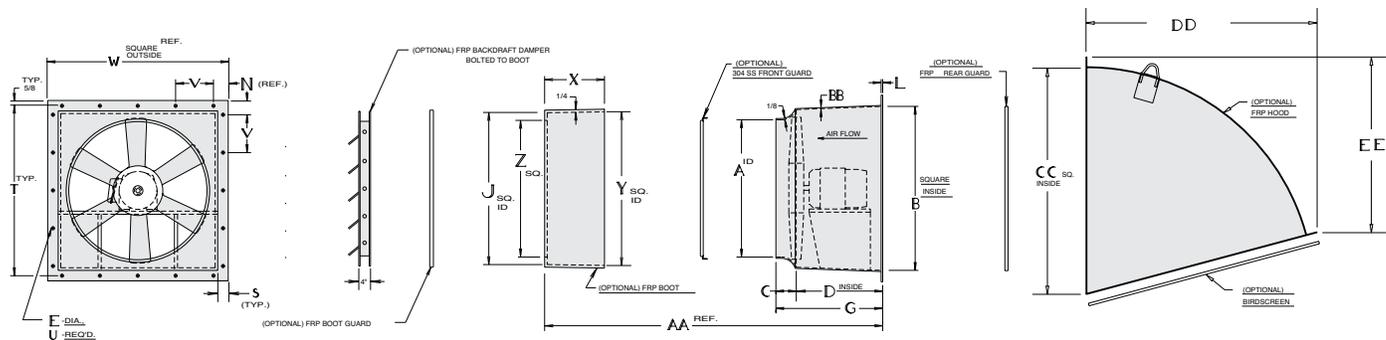


For performance data, please visit www.hartzellflow.com or contact your local sales representative.



Series 59 Fiberglass Wall Ventilator with a Series FEP Fiberglass End Pivoted Automatic Shutter used for building exhaust.

Dimensions



Principal Dimensions (inches) – Series 59

Fan Size	A	B	C	D	E	G	J	L	N	R	S	T	U
12	12 ¹ / ₄	16 ¹ / ₂	1 ⁵ / ₈	13 ³ / ₈	5 ¹ / ₁₆	15	16 ³ / ₁₆	1/4	4	17 ¹ / ₄	1 ¹ / ₂	18 ³ / ₄	12
16	16 ⁵ / ₁₆	20 ¹ / ₂	2 ¹ / ₈	13 ³ / ₈	5 ¹ / ₁₆	16	20 ³ / ₁₆	1/4	4	21 ¹ / ₄	1 ¹ / ₂	22 ³ / ₄	12
18	18 ¹ / ₄	22 ¹ / ₂	2 ¹ / ₄	15 ³ / ₄	5 ¹ / ₁₆	18	22 ³ / ₁₆	1/4	4	23 ³ / ₄	1 ¹ / ₂	24 ³ / ₄	12
20	20 ⁵ / ₁₆	25 ¹ / ₂	2 ¹ / ₂	15 ¹ / ₂	5 ¹ / ₁₆	18	25 ⁵ / ₁₆	1/4	4 ¹ / ₂	26 ¹ / ₄	1 ¹ / ₂	27 ³ / ₄	12
24	24 ⁵ / ₁₆	28 ³ / ₄	3 ¹ / ₄	15 ³ / ₄	5 ¹ / ₁₆	19	28 ⁸ / ₁₆	3/8	4 ³ / ₄	29 ³ / ₄	1 ¹ / ₂	31 ¹ / ₄	20
28	28 ⁵ / ₁₆	33 ³ / ₄	3 ¹ / ₄	16 ¹ / ₄	5 ¹ / ₁₆	19 ¹ / ₂	33 ³ / ₁₆	3/8	4 ³ / ₄	34 ³ / ₄	1 ¹ / ₂	36 ¹ / ₄	20
30	30 ⁵ / ₁₆	35 ³ / ₄	3 ¹ / ₂	17 ¹ / ₄	7 ¹ / ₁₆	20 ³ / ₄	35 ⁵ / ₁₆	3/8	5 ¹ / ₄	36 ³ / ₄	2	39 ¹ / ₄	20
32	32 ⁵ / ₁₆	36 ³ / ₄	3 ³ / ₈	18 ³ / ₈	7 ¹ / ₁₆	21 ¹ / ₂	36 ³ / ₁₆	3/8	5 ¹ / ₄	37 ³ / ₄	2	40 ¹ / ₄	20
36	36 ⁵ / ₁₆	42 ³ / ₄	3 ³ / ₈	19 ³ / ₈	7 ¹ / ₁₆	22 ³ / ₄	42 ² / ₁₆	3/8	5 ¹ / ₄	43 ³ / ₄	2	46 ¹ / ₄	20
40	40 ⁵ / ₁₆	47	3 ³ / ₈	23 ³ / ₈	7 ¹ / ₁₆	27	46 ⁶ / ₁₆	1/2	5 ¹ / ₂	48 ¹ / ₄	2	50 ³ / ₄	20
42	42 ⁵ / ₁₆	49	4 ¹ / ₄	22 ¹ / ₄	7 ¹ / ₁₆	27	48 ⁸ / ₁₆	1/2	5 ⁵ / ₈	50 ¹ / ₄	2	52 ³ / ₄	20
44	44 ⁵ / ₁₆	51	4 ¹ / ₂	24 ¹ / ₂	7 ¹ / ₁₆	29	50 ¹⁰ / ₁₆	1/2	6	52 ¹ / ₄	2	54 ³ / ₄	20
48	48 ⁵ / ₁₆	55	4 ¹ / ₄	24 ³ / ₄	7 ¹ / ₁₆	29	54 ¹⁴ / ₁₆	1/2	5 ¹ / ₁₆	56 ¹ / ₄	2	58 ³ / ₄	28
54	54 ⁵ / ₁₆	61	4 ³ / ₈	24 ⁵ / ₈	7 ¹ / ₁₆	29	60 ¹⁸ / ₁₆	1/2	5 ¹ / ₁₆	62 ¹ / ₄	2	64 ³ / ₄	28
60	60 ⁵ / ₁₆	67	5 ¹ / ₂	24 ¹ / ₂	7 ¹ / ₁₆	30	66 ²² / ₁₆	1/2	5 ¹ / ₁₆	68 ¹ / ₄	2	70 ³ / ₄	28

Fan Size	V	W	X	Y	Z	AA	BB	CC	DD	EE	Max. Motor Frame	Approx. Wt. # Less Motor & Options
12	6	20	13 ³ / ₄	16 ³ / ₈	12 ¹ / ₂	27 ¹ / ₄	1/4	21	22 ¹ / ₄	17 ¹ / ₁₆	48	30
16	8	24	14 ⁵ / ₈	20 ⁵ / ₈	16 ¹ / ₂	28 ³ / ₈	1/4	30	31 ¹ / ₁₆	23 ³ / ₄	56	35
18	9	26	14 ¹ / ₂	22 ³ / ₈	18 ¹ / ₂	30 ³ / ₈	1/4	30	31 ¹ / ₁₆	23 ³ / ₄	56	40
20	10	29	14 ¹ / ₂	25 ³ / ₈	20 ¹ / ₂	30 ³ / ₈	1/4	30	31 ¹ / ₁₆	23 ³ / ₄	184T	45
24	5 ³ / ₄	32 ¹ / ₂	15 ¹ / ₂	28 ³ / ₈	24 ¹ / ₂	31 ³ / ₈	1/4	39	39 ⁵ / ₈	30 ⁷ / ₁₆	184T	60
28	7	37 ¹ / ₂	15 ¹ / ₂	33 ³ / ₈	28 ¹ / ₂	31 ³ / ₈	1/4	39	39 ⁵ / ₈	30 ⁷ / ₁₆	184T	75
30	7 ¹ / ₂	40 ¹ / ₂	15 ¹ / ₂	35 ³ / ₈	30 ¹ / ₂	32 ³ / ₈	1/4	48	48 ³ / ₈	37 ¹ / ₁₆	215T	85
32	7 ³ / ₄	41 ¹ / ₂	15 ¹ / ₂	36 ³ / ₈	32 ¹ / ₂	34	1/4	48	48 ³ / ₈	37 ¹ / ₁₆	215T	110
36	9 ¹ / ₄	47 ¹ / ₂	16 ¹ / ₂	42 ³ / ₈	36 ¹ / ₂	35 ¹ / ₂	1/4	56	56	43	215T	125
40	10 ¹ / ₄	52	16 ³ / ₈	46 ³ / ₈	40 ¹ / ₂	39 ³ / ₈	3/8	69	68 ³ / ₈	52 ⁵ / ₈	254T	230
42	10 ¹¹ / ₁₆	54	16 ³ / ₄	48 ³ / ₈	42 ¹ / ₂	39 ³ / ₈	3/8	69	68 ³ / ₈	52 ⁵ / ₈	254T	240
44	11	56	16 ³ / ₄	50 ³ / ₈	44 ¹ / ₂	41 ³ / ₈	3/8	69	68 ³ / ₈	52 ⁵ / ₈	254T	255
48	8 ⁵ / ₁₆	60	16 ³ / ₄	54 ³ / ₈	48 ¹ / ₂	41 ³ / ₈	3/8	69	68 ³ / ₈	52 ⁵ / ₈	256T	290
54	9 ⁹ / ₁₆	66	17	60 ³ / ₈	54 ¹ / ₂	41 ³ / ₄	3/8	79	78 ¹ / ₄	60 ¹ / ₁₆	256T	305
60	10 ¹⁵ / ₁₆	72	17 ¹ / ₂	66 ³ / ₈	60 ¹ / ₂	42 ³ / ₈	3/8	89	87 ³ / ₈	67 ¹ / ₁₆	256T	320

Fiberglass Centrifugal Exhausters

Hartzell Fiberglass Centrifugal Exhausters provide a low profile roof or wall exhaust solution in both downblast and upblast configurations. They provide a major advantage for general ventilation applications where concentrations of corrosive elements exceed the limits of

standard fans. The fiberglass construction is not only resistant to corrosive elements, but also provides additional advantages such as weight, high strength to weight ratio and dimensional stability.

Standard Construction

- **Construction** – All structural parts in the airstream are either fiberglass resin or epoxy coated stainless steel. All fiberglass surfaces are protected with a minimum 10-mil thickness of chemical, flame, and ultraviolet resistant resin.
 - **Housing** – Constructed of fiberglass and a corrosion resistant vinylester resin with a Class I flame spread rate of 25 or less
 - **Wheels** – Constructed of fiberglass and a corrosion resistant vinylester resin with a Class I flame spread rate of 25 or less
- **Hardware** – All internal hardware (airstream) is Type 304 stainless steel. All internal hardware (out of airstream) is zinc plated.
- **Shaft Seal** – A fiberglass and neoprene shaft seal is placed where the shaft leaves the housing.
- **Wiring Access** – Conduit tube between the motor enclosure and the curb panel provides wiring access without an additional roof penetration.

For Direct Drive Units:

- **Shafts** – Direct drive units have extended shaft motors with mild steel shafts. 304 or 316 stainless steel or monel shafting is available as an option at an extra cost.

For Belt Drive Units:

- **Shafts** – Turned, ground, polished, keyed at both ends and fiberglass enclosed in the airstream. Shafts are sized to operate well below critical speed. 304 or 316 stainless steel or monel shafting is available as an option at an extra cost.
- **Bearings** – Bearings are heavy-duty, deep row radial ball type, self-aligning and shielded in cast iron housings. Long inner races insure even load distribution, providing a high radial and thrust load capacity. Bearings are relubricable.
- **V-Belt Drives** – Oversized for long life and continuous duty. Fixed pitch or variable pitch drives are available upon request. Belts are oil, heat and static resistant type.

Type FE Wheel

The Type FE wheel is unique in the fan and blower industry. It is manufactured as a single fiberglass piece using a multi-section RTM mold, ensuring that each wheel is aerodynamically identical and provides reliable, repeatable performance without the variability of hand-made and taped components. The superior design is a result of a substantial investment in research, development, tooling, and manufacturing methods by Hartzell Air Movement.

FEATURES: Type FE wheels are highly efficient with a tapered inlet side and airfoil blades and have a non-overloading horsepower characteristic curve. When used in conjunction with a precision inlet cone it efficiently moves large volumes of air at high pressures with low noise characteristics at low RPM.

CONSTRUCTION: Type FE wheels are solid fiberglass, die formed and molded with Derakane 510-A corrosion resistant vinylester resin. The fiberglass resin has a Class I flame spread rate of 25 or less. Special constructions are available for abrasive or extremely corrosive environments.

BALANCING: Each wheel is electronically, statically and dynamically balanced according to the requirements of Fan Application Category BV-3 of AMCA/ANSI Std. 204-20. Each wheel is also operationally tested and inspected before shipment.

Hartzell offers the *ONLY* fiberglass wheel available in a solid, one-piece design from the mold.



- ✓ Solid, one-piece design from an RTM mold – up to 60" diameter
- ✓ Highly efficient with a tapered inlet side and airfoil blades
- ✓ Non-overloading horsepower characteristic curve
- ✓ Available in 12" - 40" diameters for Series 82, 83, 87 and 88
- ✓ Available in clockwise rotation

Options and Accessories | Series 82, 83, 87 and 88

ASTM D4167-21 Construction

(ASTM D4167-21, Standard Specification for Fiber-Reinforced Plastic Fans and Blowers.) For corrosive systems where ASTM construction is specified this construction option adds: synthetic veil and electrostatically conductive surface coating applied to airstream housing and impeller surfaces, special nameplates, and special final dynamic balancing to fan.

Optional Heavy-Duty Dampers

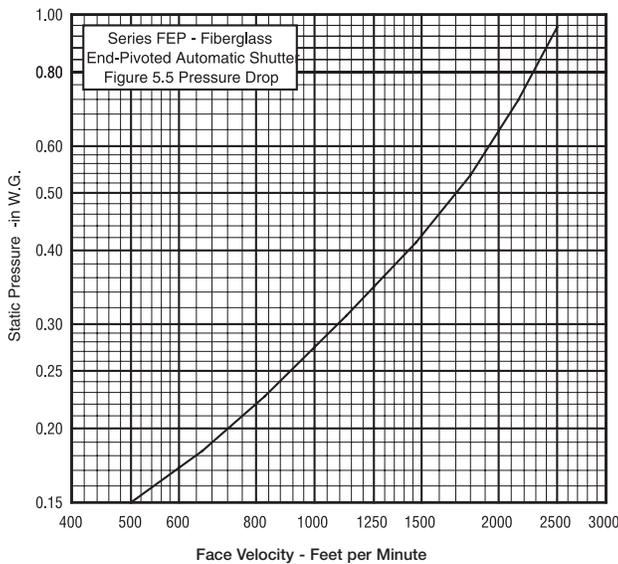
The Hartzell Series FEP are end-pivoted, gravity backdraft shutters constructed entirely of fiberglass.

- Maximum Temperature: 200°F
- Maximum Face Velocity: 2,500 FPM
- Maximum Differential Pressure: 1" W.G.
- Shipped loose for field mounting in roof curb.



Series FEP
Fiberglass
End-Pivoted
Automatic Shutter

Performance Data



Series 88 Fiberglass Exhauster with Custom FRP Base

Disconnect Switch

Shipped loose for field mounting.

Bird Screen

304 stainless steel birdscreen available on all exhausters.

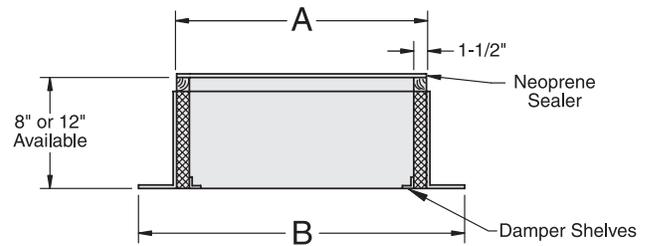
Prefabricated Curbs

The CT-1 fiberglass prefabricated curb shown is for flat roof installation of Hartzell centrifugal exhauster. The curb is designed for metal, concrete or wood roof decks that are not surface insulated. The curb is available either 8" or 12" high.

Model IRC-1 prefabricated curb constructed of galvanized steel is also available with identical features as Model CT-1. Galvanized models can be furnished with epoxy coating. Aluminum construction also available.



All prefabricated curbs can be furnished for slope or peak bases. Prefabricated curbs are designed to support the weight of the fans cataloged herein and attachments not exceeding over 100 additional pounds in a 40 mph wind. Nonstandard curb construction is available.



Principal Dimensions (in.) – Series 82, 83, 87, 88

Fan Size	12	15	18	24	30	36	40
A	19 1/4	23 1/4	29 1/4	29 1/4	35 1/4	41 1/4	47 1/4
B	27 1/4	31 1/4	37 1/4	37 1/4	43 1/4	49 1/4	55 1/4

Series 82 & 83 (Downblast) | Fiberglass Exhausters

Series 87 & 88 (Upblast) | Fiberglass Exhausters

Features:

- **Applications** – Examples include paint and chemical storage facilities, gas transmission pump houses, battery charging facilities and wastewater/odor control pumping stations.
- **Sizes** – 12" to 40"
- **Performance** – 500 to 22,000 CFM
- **Temperature** – Suitable for temperatures up to 125°F
- **Motor** – Direct drive motors are standard with an extended shaft. Belt drive motors are standard t-frame. Motor and drive components are protected from the airstream and include internal isolation to minimize vibration. They are available in single or three phase, with two-speed and explosion proof motors available on some models.
- **FRP Materials** – The dome ventilators consist of a fiberglass housing, fiberglass curb cap, and fiberglass motor cover all constructed of vinylester resin. The solid fiberglass wheel is molded with Derakane 510-A corrosion resistant vinylester resin. The unit has a formed fiberglass venturi inlet and outlet. All airstream hardware is 304 stainless steel.
- **Type FE Wheel** – High efficiency, solid fiberglass wheel built in one piece using a multi-section mold. This process insures repeatability and provides sealed, stronger joints. The tapered inlet side and airfoil design efficiently moves large volumes of air at high pressures. The wheel has a non-overloading horsepower characteristic curve.



Series 82 (Direct Drive)
Series 83 (Belt Drive)

Type FE Wheel



Series 87 (Direct Drive)
Series 88 (Belt Drive)

Type FE Wheel



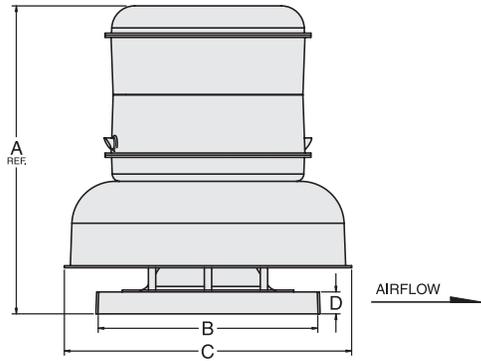
Series 88 Fiberglass Exhauster with Electrostatic Grounding and Hoods

For performance data, please visit www.hartzellflow.com or contact your local sales representative.



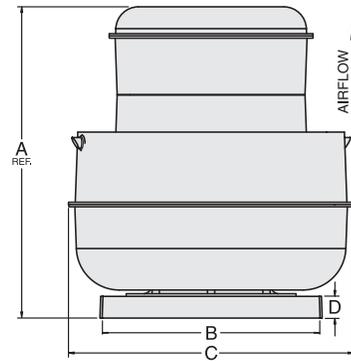
Hartzell Air Movement certifies that the Series 82 Fiberglass Direct Drive Downblast Exhausters, Series 83 Fiberglass Belt Drive Downblast Exhausters, Series 87 Fiberglass Direct Drive Upblast Exhausters, and Series 88 Fiberglass Belt Drive Upblast Exhausters, shown herein are licensed to bear the AMCA seal for sound and air performance. Ratings are based on tests and procedures performed in accordance with AMCA Publication 211 and Publication 311 and comply with the requirements of the AMCA Certified Ratings Program. For performance and sound data, please visit www.hartzellflow.com or contact your local sales representative.

Dimensions



Principal Dimensions (inches) – Series 82 & 83 Downblast

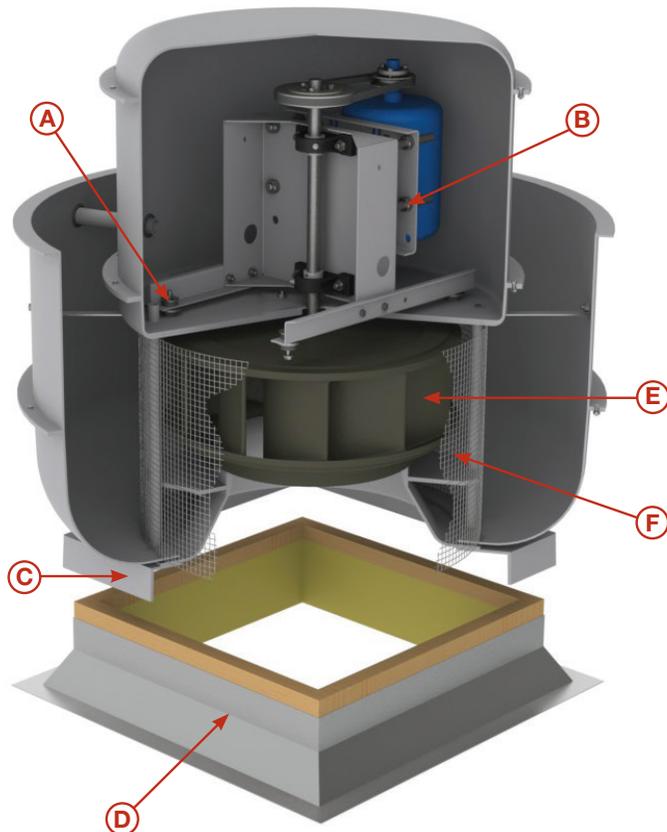
Fan Size	A (Ref)	B	C	D
12	32 ⁷ / ₁₆	20	30	2
15	33 ³ / ₁₆	24	34 ⁷ / ₈	2
18	42 ¹ / ₂	30	39 ¹ / ₄	3
24	46	30	49 ⁹ / ₈	3
30	55 ⁷ / ₈	36	54 ³ / ₈	3
36	60 ¹ / ₂	42	64 ⁵ / ₈	3
40	63 ³ / ₄	48	64 ⁵ / ₈	3



Principal Dimensions (inches) – Series 87 & 88 Upblast

Fan Size	A (Ref)	B	C	D
12	32 ¹⁵ / ₁₆	20	30	2
15	33 ⁷ / ₁₆	24	34 ⁷ / ₈	2
18	42 ³ / ₄	30	39 ⁹ / ₈	3
24	46 ¹ / ₄	30	49 ⁹ / ₈	3
30	56 ¹ / ₈	36	54 ³ / ₈	3
36	60 ³ / ₄	42	64 ⁵ / ₈	3
40	64	48	64 ⁵ / ₈	3

Series 88 Cross-Section View



A. Vibration Isolator

Reduces vibration and noise transfer between drive system and fan housing.

B. Drive Tensioning Bolts

Provides easy method to adjust belt tension.

C. Curb Panel

Integral adapter to aid in securing the fan to a roof curb.

D. Prefabricated Roof Curb (Optional)

Fiberglass prefabricated roof curbs are designed for metal, concrete or wood roof decks that are not surface insulated. They are available for flat, slope or peak roof installation in 8" or 12" heights. Custom curb construction is also available.

E. Type FE Wheel

Highly efficient, solid fiberglass wheel, built in one-piece using a multi-section mold, with a tapered inlet side, airfoil blades and a non-overloading horsepower characteristic curve. Available in clockwise rotation.

F. Birdscreen (Optional)

Stainless steel guard protects fan from birds and large debris.

Selecting & Specifying Corrosion Resistant Fans

WHAT IS CORROSION?

“Corrosion” refers to the destruction or deterioration of a material due to a reaction with its environment. Corrosive atmospheres can deteriorate fan equipment and lead to premature failure. This can result in costly repairs and downtime.

TO PROPERLY SELECT AND SPECIFY A FAN IN A CORROSIVE ENVIRONMENT YOU NEED TO CONSIDER THE FOLLOWING:



1

1: Identify Chemical Name – You must identify the chemical name (not tradename), temperature, and concentration of mixture as it passes through the fan. If two or more corrosives are mixed when they pass through the fan, that must be determined as well. When corrosive materials are manufactured, the method of manufacture sometimes allows traces of various chemical components used in the process to remain. These are referred to as impurities, and they can do more damage to the fans than the corrosives themselves. Corrosives that are in the air outside the fan can lead to structural, hardware, bearing, and drive component failures.



2

2: Liquid droplets – Drops of liquid passing through the fan are as effective as sandpaper at removing coatings and protective surfaces. These drops can erode the fan surface. Hartzell offers HartKoate coating on fiberglass fans. This ceramic finish is abrasion and corrosion resistant. It helps protect the fiberglass fan surface from eroding prematurely.



3

3: Purged Systems – Allowing a fan to run for a few minutes after the corrosive fumes have been shut off will often prevent many problems. If corrosive fumes collect in “nooks and crannies” in the system, they can become more concentrated. When these fumes cool, droplets condense out of suspension. The result is puddles of concentrated corrosives forming in the worst possible places. These lead to mechanical or structural defects. Purging the system by running the fan a few minutes longer can help prevent these build ups.

WHEN YOU NEED TO SELECT AND SPECIFY A FAN TO BE USED IN A CORROSIVE ENVIRONMENT, PLEASE CONTACT YOUR LOCAL HARTZELL SALES REPRESENTATIVE FOR THE PROPER INFORMATION AND ASSISTANCE TO DO THE JOB RIGHT.

Hartzell offers fans constructed of carbon steel, aluminum, stainless steel, and special alloys. Coated fans are also available, with a standard selection of epoxies, inorganic zincs, and bitumastic coatings. Other special coatings are available for tougher applications.

4: Materials of Construction – Once you know the environment in which the equipment will be applied, you need to look for the best available materials of construction for your fans. There are various publications available which show corrosion resistant characteristics of different materials. Much of this data is in Hartzell Fan's "Engineering Data" (Hartzell Bulletin A-108). In this summary, the effects of a large number of corrosives commonly used in industrial and municipal works are contrasted to standard fan equipment materials of constructions and specialty coatings. Simply identify the particular corrosive agent(s) and determine which metal fan, coated fan, or solid fiberglass fan is best suited for the application. These corrosion resistant tables are also found at the end of this bulletin.



4

5: Explosive or Flammable Materials – In conjunction with corrosion resistance there are some chemicals that may be present in the airstream that are considered explosive or flammable. When this is the case it is important to have static electrical grounding construction which adds graphite / carbon rich resin to the airstream surfaces and the fan gets electrically grounded. This helps to eliminate any chance of static charge build-up.



5

6: Extra Heavy Duty Corrosion Barrier – Hartzell fans are also available with synthetic veils (H-Cor Construction). They are made with various materials such as polyester, carbon, glass, and other specialty materials. Surfacing veils key purposes is to "seal" the reinforcement materials from the airstream. If there is a pinhole in the laminate, or if some of the reinforcement materials protrude through the topcoats and gets exposed to the airstream, there is a list of chemicals that can weaken the link between the resin and the reinforcement materials. If that part is under stress, it can lead to premature failure. Surfacing veils also get used to create a thicker corrosion barrier, as detailed in various customer specifications and industry standards.



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Corrosion Resistance Guide

Temperature values shown are for immersion or condensate contact applications. Where temperature values are shown, resin is suitable for hood and duct type applications for the full operating temperature range of the product. See product specifications for materials of construction and maximum operating temperature limits.

	FIBERGLASS***						COATINGS				
	Aluminum	Stainless 304	Stainless 316	Carbon Steel	Monel	Neoprene	Derakane 510-A & B	Epoxy (250°F)	Inorganic Zinc (150°F)	Coal Tar Epoxy (300°F)	Plasite 712ZL (HAR, TFE)
Acetic Acid, to 10% (Fumes Only)	G	G	G	F	F	G	210	G	NR	G	F
Acetone (Fumes Only)	G	G	G	G	G	F	180	G	G	-	F
Alcohol - Ethyl (15%)	G	G	G	G	F	G	80	G	G	-	F
Aluminum Acetate	F	G	G	-	F	F	-	G	NR	-	F
Aluminum Hydroxide	G	G	G	G	NR	G	180	G	NR	-	F
Aluminum Sulphate	G	F	G	G	F	G	210	G	NR	-	G
Ammonia (Dry - 1%)	G	G	G	G	NR	G	100	G	NR	G	G
Ammonia (Moist - 1%)	F	G	G	G	NR	G	NR	G	NR	-	F
Ammonium Chloride	NR	F	F	NR	F	G	*210	G	NR	G	G
Ammonium Hydroxide to 5%	F	G	G	F	NR	G	180S	G	NR	G(10)	F
Ammonium Nitrate	G	G	G	NR	NR	F	220	G	NR	G(30)	G
Ammonium Perchlorate	G	G	G	-	-	-	-	NR	-	-	G
Ammonium Persulfate (Saturated)	F	G	G	G	NR	G	180	NR	-	-	G
Ammonium Phosphate	G	G	G	NR	F	G	210	G	-	-	G
Ammonium Sulphate	NR	G	G	F	F	G	220	F	-	G(10)	G
Ammonium Sulphite	NR	G	G	-	NR	-	150	G	-	-	G
Barium Chloride	NR	G	G	F	F	G	210	G	-	-	G
Barium Hydroxide	NR	-	G	F	-	G	150	G	NR	-	G
Barium Nitrate	G	G	G	G	NR	G	-	F	-	-	G
Barium Sulphate	G	G	G	F	F	G	210	F	-	-	G
Benzene	G	G	G	F	G	NR	NR	G	-	-	G
Benzoic Acid	G	G	G	-	F	NR	210	G	G	-	G
Boric Acid (5%)	G	G	G	F	F	G	210	G	NR	-	G
Bromine, Wet Gas	NR	NR	NR	NR	NR	F	NR	G	NR	G	F
Butyric Acid, to 50%	G	G	G	-	F	NR	210	NR	-	-	G
Calcium Carbonate	F	G	G	G	F	G	180S	G	-	-	G
Calcium Chlorate	-	G	G	-	F	G	220	G	-	-	F
Calcium Chloride	F	F	F	F	F	G	220	G	NR	-	G
Calcium Hydroxide	F	G	G	F	F	G	180SS	G	NR	-	F
Carbolic Acid	G	G	G	NR	F	NR	NR	NR	-	G(5)	NR
Carbon Monoxide Gas	G	G	G	-	NR	G	250	G	-	-	G
Carbon Tetrachloride	G	G	G	NR	G	NR	150	G	F	G	G
Chlorine Gas (Dry)	F	F	F	NR	G	F	*220SS	F	NR	-	F
Chlorine Gas (Moist)	NR	NR	NR	NR	NR	NR	*180SS	F	NR	-	NR
Chlorine Water	NR	-	-	NR	NR	NR	*180SS	G	NR	G	F
Chlorobenzene	G	G	G	F	G	NR	NR	F	-	-	F
Chromic Acid, to 5%	F	F	G	NR	NR	NR	150	G(20)	NR	NR	F
Citric Acid	F	G	G	NR	F	G	*210	G	NR	G	F
Copper Acetate	NR	G	G	NR	NR	F	-	G	-	-	F
Copper Chloride	NR	NR	NR	NR	NR	G	*210	G	-	-	G
Copper Cyanide	NR	G	G	NR	NR	G	210	G	-	-	F
Copper Nitrate	NR	G	G	NR	NR	G	210	F	-	-	F
Copper Sulphate	NR	G	G	NR	NR	G	210	F	-	-	G
Detergents	G	F	F	G	-	F	150	G	-	G	G
Ethyl Chloride	F	G	G	NR	F	NR	NR	G	F	-	NR
Ethylene Chloride	F	G	G	NR	-	NR	NR	G	F	-	NR
Ferric Nitrate	NR	G	G	-	NR	G	210	F	-	-	-
Ferric Sulphate	NR	F	F	NR	F	G	210	F	-	-	-
Ferrous Sulphate	G	F	G	NR	F	G	210	F	-	-	G
Fluoboric Acid	NR	NR	F	NR	-	G	210SS	NR	-	-	F
Formalin Formaldehyde	G	G	G	G	G	NR	150	G(20)	NR	G	F
Formic Acid, to 10%	F	G	G	NR	F	G	180	NR	NR	-	F
Furfural, to 10%	G	G	G	G	F	F	NR	F	NR	-	F
Gallic Acid	G	G	G	NR	F	F	-	F	-	-	-
Gasoline	G	G	G	G	G	F	120	G	G	G	G
Hydrobromic Acid, to 25%	NR	NR	NR	NR	NR	NR	*180	NR	NR	-	-
Hydrochloric Acid, to 15%	NR	NR	NR	NR	F	G	*210SS	NR	NR	G	F
Hypochlorous Acid	NR	NR	NR	NR	-	-	100	NR	-	-	-
Hydrocyanic Acid, to 10%	G	G	G	F	-	G	210	NR	-	-	F
Hydrofluosilicic Acid, to 10%	NR	NR	NR	-	F	F	*180SS	NR	-	-	G
Hydrofluoric Acid, to 10%	NR	NR	NR	NR	G	G	*150SS	NR	NR	-	NR
Hydrogen Peroxide, to 30%	G	G	G	NR	F	F	150	G	NR	G	F
Hydrogen Sulfide, to 5%	G	F	G	G	NR	G	180	F	NR	G	F
Lactic Acid	F	F	G	NR	NR	G	*210	NR	NR	-	-
Magnesium Carbonate	F	G	G	-	F	G	180	G	-	-	-
Magnesium Chloride	NR	F	G	F	G	G	210	G	NR	-	G
Magnesium Nitrate	G	G	G	-	F	G	210	F	-	-	-
Magnesium Oxchloride	NR	NR	NR	-	-	-	-	NR	-	-	-
Maleic Acid	G	G	G	G	F	NR	210	NR	-	-	G
Manganese Carbonate	F	G	G	-	F	-	-	G	-	-	-
Mercurous Nitrate	NR	G	G	-	NR	-	-	F	-	-	F

	FIBERGLASS***						COATINGS				
	Aluminum	Stainless 304	Stainless 316	Carbon Steel	Monel	Neoprene	Derakane 510-A & B	Epoxy (250°F)	Inorganic Zinc (150°F)	Coal Tar Epoxy (300°F)	Plasite 712ZL (HAR, TFE)
Methyl Ethyl Ketone, to 10%	G	G	G	G	-	NR	NR	G	G	F	F
Mehtylene Chloride	NR	G	G	G	F	NR	NR	NR	F	-	-
Naphtha	G	G	G	G	F	NR	180	G	G	-	G
Napthalensulfonic Acid	NR	NR	NR	-	-	NR	-	NR	-	-	G
Nickel Chloride	NR	F	F	NR	F	F	210	G	-	-	G
Nickel Nitrate	NR	G	G	NR	NR	-	210	F	-	-	-
Nickel Sulphate	NR	F	F	NR	F	G	210	F	-	-	-
Nitric Acid, to 5%	NR	G	G	NR	NR	F	150	NR	NR	F	F
Nitrous Acid	F	G	G	-	NR	NR	-	NR	-	-	F
Oleic Acid	G	G	G	F	F	G	210	G	NR	-	G
Oxalic Acid, to 10%	NR	G	G	NR	F	F	*120	G	NR	G(20)	G
Ozone	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Perchloric Acid, to 10%**	NR	NR	NR	NR	G	F	150	NR	NR	-	F
Phenol, to 10%	G	G	G	NR	F	-	NR	G(10)	F	-	NR
Phosphoric Acid, to 10%	NR	G	G	NR	F	F	*210	NR	NR	NR	F
Phosphoric Anhydride	G	G	G	-	-	F	-	F	-	-	-
Picric Acid, to 10%	G	G	G	NR	NR	G	NR	NR	-	-	F
Potassium Bromide	F	G	G	NR	F	G	-	G	-	-	G
Potassium Chloride	F	G	G	G	F	G	210	G	-	-	G
Potassium Cyanide	NR	G	G	G	F	G	-	F	-	-	G
Potassium Dichromate	G	G	G	F	F	G	210	F	NR	-	-
Potassium Ferricyanide	G	G	G	-	F	G	210	G	-	-	-
Potassium Ferrocyanide	G	G	G	F	F	G	210	G	-	-	G
Potassium Hydroxide, to 25%	NR	G	G	G	G	G	150SS	G	NR	G	G
Potassium Hypochlorite	NR	NR	NR	-	NR	-	-	G	-	-	-
Potassium Nitrate	G	G	G	G	F	G	210	G	-	-	G
Potassium Permanganate	G	G	G	G	F	-	210	F	-	G(5)	-
Potassium Sulphate	F	G	G	G	G	G	210	G	-	-	F
Pyrogalllic Acid	G	G	G	F	-	-	-	F	-	-	-
Salt Spray	F	G	G	NR	G	G	210	G	G	G	G
Silver Bromide	NR	F	G	-	F	-	-	G	-	-	-
Silver Nitrate	NR	G	G	NR	NR	G	210	G	-	-	F
Sodium Acetate	G	G	G	F	F	F	210	G	NR	-	-
Sodium Bisulfate	F	G	G	NR	F	F	210	G	-	-	G
Sodium Borate	F	G	G	F	F	F	210	G	NR	-	-
Sodium Carbonate, to 35%	NR	G	G	G	G	G	180SS	G	NR	-	G
Sodium Chlorate	F	G	G	F	G	G	210	NR	NR	-	G
Sodium Chloride	F	F	G	F	G	G	180	G(30)	NR	G	G
Sodium Citrate	NR	G	G	-	-	-	-	F	-	-	G
Sodium Dichromate	G	-	-	G	-	F	210	F	NR	-	-
Sodium Ferricyanide	G	G	G	-	F	-	210	G	-	-	-
Sodium Fluoride	F	G	G	NR	G	NR	180SS	F	-	-	-
Sodium Hydroxide, to 10%	NR	G	G	G	G	G	150SS	G	NR	G	F
Sodium Hypochlorite, to 15%	NR	F	F	NR	NR	G	150SS	F	NR	G(5)	F
Sodium Hyposulfite	NR	G	G	-	F	-	-	F	-	-	-
Sodium Nitrate	G	G	G	G	F	F	210	F	-	-	G
Sodium Nitrite	G	G	G	-	F	-	-	F	-	-	G
Sodium Perchlorate, to 10%	G	G	G	-	-	-	-	NR	-	-	-
Sodium Peroxide	F	G	G	F	F	G	-	F	-	-	-
Sodium Phosphate	NR	G	G	-	G	F	210	G	-	G(10)	F
Sodium Salicylate	NR	-	G	-	-	-	-	G	-	-	F
Sodium Silicate	F	G	G	G	F	G	-	G	NR	-	G
Sodium Sulfate	F	G	G	G	G	G	210	F	NR	-	F
Sodium Sulfite	F	G	G	-	F	G	210	F	NR	-	G
Sodium Sulfide	NR	G	G	G	F	G	210	G	NR	-	G
Stannic Chloride	NR	NR	NR	NR	NR	F	*210	NR	-	-	-
Stannous Chloride	NR	F	F	NR	F	G	*210	F	-	-	G
Steam Vapor	G	G	G	G	G	G	180	F	-	-	NR
Stearic Acid	G	G	G	F	F	F	210	G	NR	-	G
Strontium Hydroxide	NR	G	G	-	-	-	-	G	-	-	-
Strontium Nitrate	NR	G	G	-	NR	-	-	F	-	-	-
Sulfur Dioxide Gas	G	G	G	NR	NR	G	210	NR	NR	-	G
Sulfuric Acid, to 25%	NR	NR	NR	NR	F	G	*210SS	NR	NR	G	F
Sulfurous Acid, to 10%	F	F	F	NR	NR	NR	120	NR	NR	-	F
Tannic Acid	F	G	G	F	F	G	210	G(50)	NR	G	G
Tartaric Acid	F	G	G	NR	F	G	210	G	NR	-	F
Trichlorethylene	F	G	G	G	G	NR	NR	NR	F	-	F
Water (Moisture)	G	G	G	NR	G	G	200	G	G	G	G
Xylo-Toluol	G	G	G	G	-	NR	80	G	G	G	G
Zinc Chloride	NR	G	G	NR	F	G	*210	G	-	-	G
Zinc Cyanide (Moist)	NR	G	G	-	-	-	180SS	G	-	-	-
Zinc Nitrate	F	G	G	-	-	-	210	F	-	-	-
Zinc Sulfate	F	G	G	NR	F	G	210	F	-	-	-

NOTES: * Special shaft and hardware required, contact factory.
 ** Special design considerations required (explosive environment), contact factory.
 *** Temperature values shown for fiberglass resins are for immersion or condensate contact applications.

KEY G = Good F = Fair NR = Not Recommended
 - = Unknown S = Synthetic Veil Required (HiCor) SS = Double Veil

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