

Rooftop Applications

QwikProducts

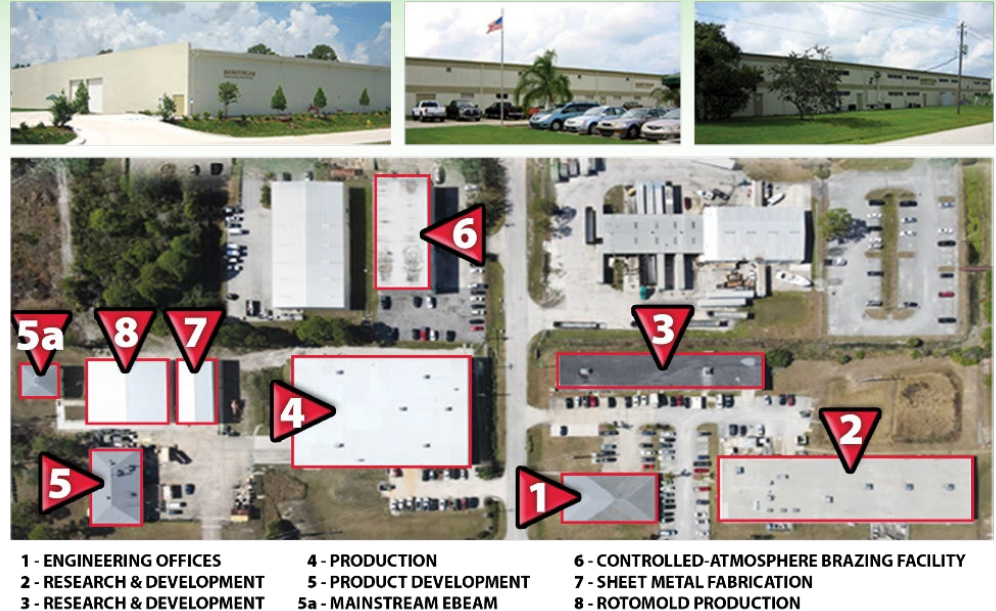
Business Development Team

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2024

- ▶ Small business incorporated in 1986
- ▶ 200+ employees
- ▶ Mechanical, chemical, electrical, materials and aerospace engineers
- ▶ 85,000 ft² facility in Rockledge, FL
- ▶ Eight-building campus
- ▶ Laboratories: electric power, electronics, materials, nanotube, physical and analytical chemistry, thermal, fuels, internal combustion engines
- ▶ Manufacturing: 3- and 5- axis CNC and manual mills, CNC and manual lathes, grinders, sheet metal, plastic injection molding, rotomolding, welding and painting
- ▶ Brands: QwikProducts, Mainstream Marine, EPATest.com, and more!



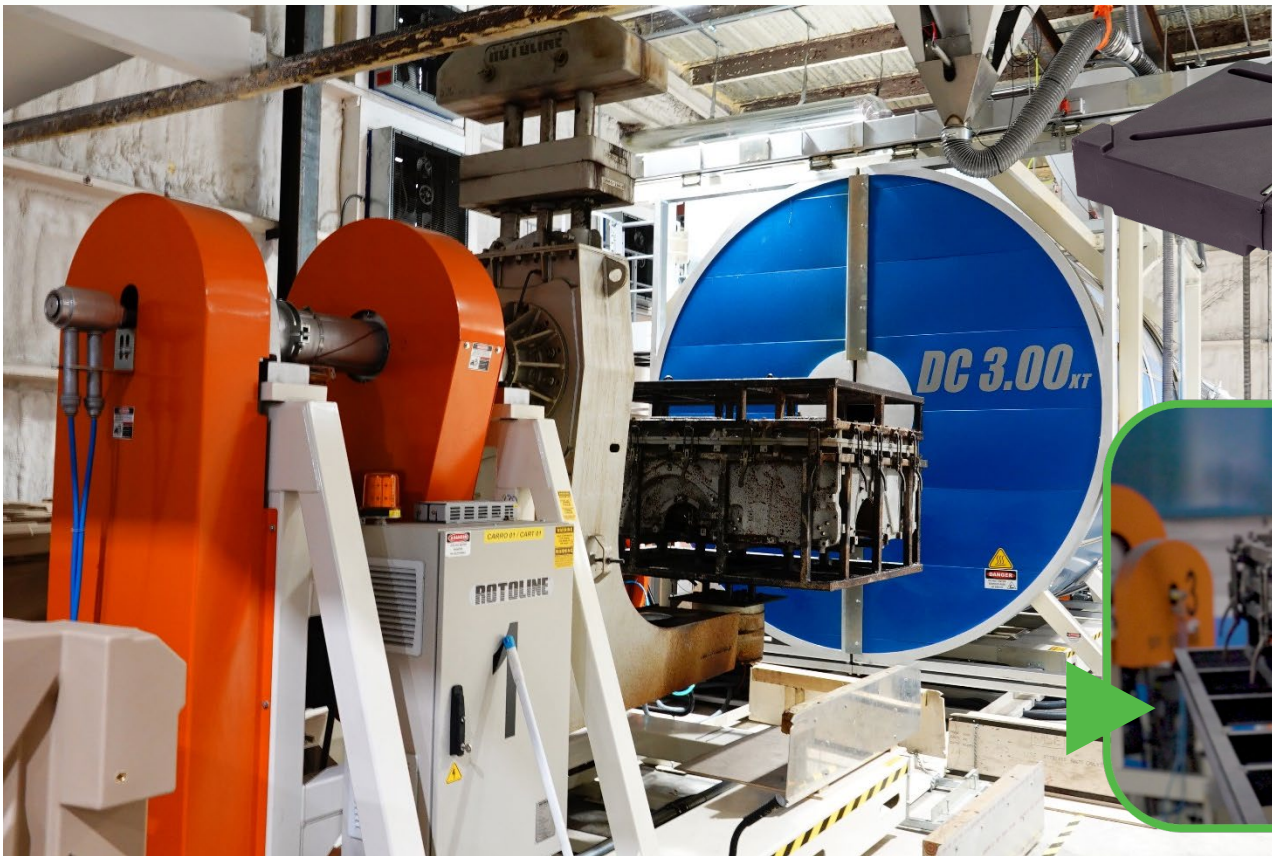
Capabilities

- ▶ **Basic Research, Applied Research & Product Development**
- ▶ **Transition from Research to Production**
- ▶ **Manufacture Advanced Products**

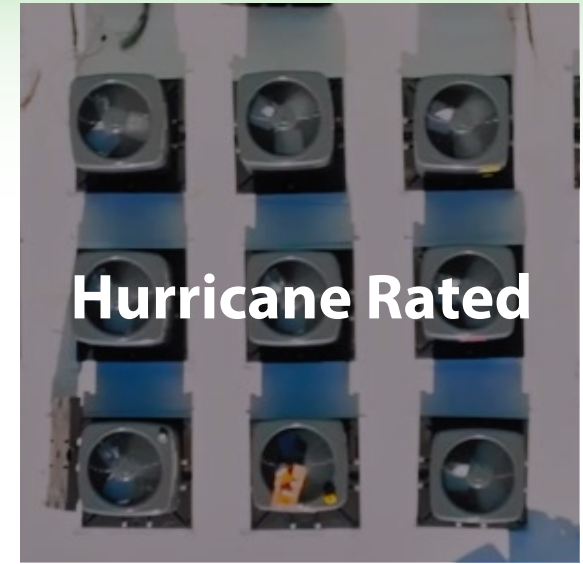
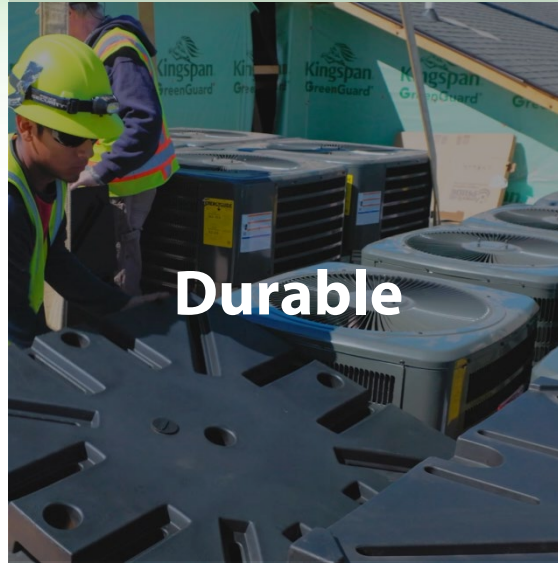
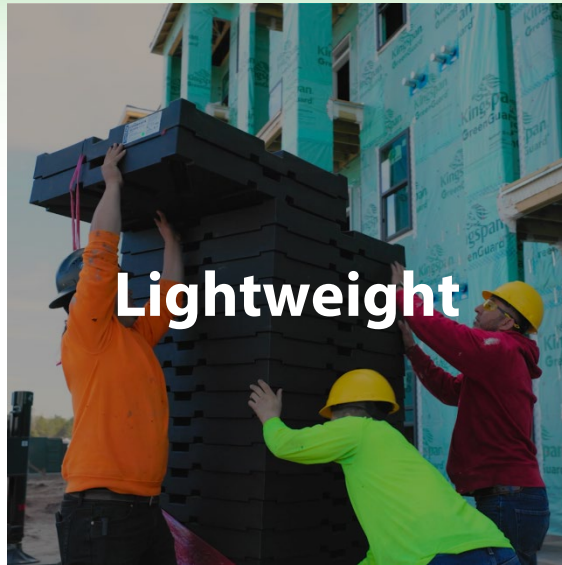
QwikPad® For Condensers

Made in the USA

Designed, Manufactured, and Shipped from Rockledge, FL



QwikPad® For Condensers



Specifications

	QT8036	QT8040
Dimensions	36" x 36" x 4"	40" x 40" x 4"
Material	Linear Low Density Polyethylene (LLDPE)	Linear Low Density Polyethylene (LLDPE)
Pad Weight (Empty)	29 lb	35 lb
Pad Weight (Full)	163 lb	203 lb
Maximum Condensing Unit Size	32" x 32"	36" x 36"

QwikPad® For Condensers



240 Unit
Rooftop
Install in
Houston, TX

Architect
JHP Architecture
Contractor
Block Construction



- ▶ **Hurricane Rated** for winds up to 180 mph
- ▶ **Durable** UV-resistant with all stainless steel hardware
- ▶ **Lightweight** for transport and 1-man handling (35lbs unfilled and 203lbs filled)
- ▶ **Just Add Water!** The water reacts with a gelling agent inside the pad to add weight and provide freeze protection

QwikPad® For Condensers



Lifetime Warranty

Defect-free guarantee for the life of the equipment that is installed with the QwikPad



No Roof Penetration

Reduce need to puncture the roof membrane



UV Damage Tested

10-year accelerated UV testing showed no degradation

[UV Testing Results](#)



2017



2024

Stainless Steel Mounting Hardware



- ▶ **Strong Durable, Rust-Free Attachment** stainless steel materials for long-lasting durability
- ▶ **Adjustable** to fit the size of the unit by sliding the tie-down bracket to fit any configuration

Regular hardware
rusts overtime



Adjustable



Myrtle Beach, SC

- ▶ **Units** 280
- ▶ **Location** Hawthorne @ The Mill 208
Windfall Way
- ▶ **Builder** The Sembler Co.
- ▶ **Contractor** American Mechanical



Watch this
install video by
scanning the QR
code or clicking



youtube.com/watch?v=Bp-CgM8thuY&t=24s

Image Source www.rentcafe.com/apartments/sc/myrtle-beach/hawthorne-at-the-mill/default.aspx



Houston, TX

- ▶ **Units** 240
- ▶ **Location** Columbia Senior Residential 2100 Memorial Dr
- ▶ **Architect** JHP Architecture
- ▶ **Contractor** Block Construction



Nashville, TN

- ▶ **Units** 40 growing to 300
- ▶ **Location** Livano Nations
- ▶ **Builder** LIV Development
- ▶ **Contractor** LandSouth Construction



Image Source <https://www.columbiares.com/under-development-community/2100-memorial/>

Kittery, ME

- ▶ **Units** 286
- ▶ **Location** 41 Seacoast Terrace, Kittery, ME 03904
- ▶ **Architect** Cube 3
- ▶ **Contractor** Atlantis Comfort Systems



Watch the install feature by
scanning the QR code or visit
youtube.com/watch?v=GXS8F3Nk40U

Knightdale, NC

- ▶ **Units** 239
- ▶ **Location** The Lofts @ Knightdale
- ▶ **Architect** Brown Investment Properties
- ▶ **Contractor** Windsor Mechanical



Durham, NC

- ▶ **Units** 231
- ▶ **Location** Vintage Durham
- ▶ **Builder** Capital Commercial
- ▶ **Contractor** Klimatology HVAC



Cary, NC

- ▶ **Units** 360
- ▶ **Location** Abberly Alson
- ▶ **Builder** HHHunt
- ▶ **Contractor** American Mechanical





Thank You

QwikProducts

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Appendix

Wind Loading

- ▶ Wind Loading based on ASCE 7-22
 - Risk Category II (Table 1.5-1), Exposure Category C (Sec. 26.7.3)
 - Wind Speed Zones (Fig. 26.5-1B)
 - Velocity Pressure (Eq. 26.10-1) $q_z = .00256 K_z K_{zt} K_e V^2 (lb/ft^2)$
 - Wind Load (Eq. 29.4-1) $F = q_z K_d G C_f A_f (lb)$
 - Lateral force only.
- ▶ Overturn defined as Total Wind Moment > Weight Moment about tipping point
- ▶ Sliding should be considered for rooftop applications due to lower coefficient of friction between roof material and LDPE
 - Sliding defined as Total Wind Load > Static Friction
 - May require high-friction interface material

Wind Loading Factors

Factor	Description	ASCE 7	QwikPad Values
K_z	Pressure Coeff. (related to height and Exposure Category)	Table 26.10-1	0.85
K_{zt}	Topographic	Sec. 26.8.2 Fig. 26.8-1	1.00
K_e	Ground Elevation	Table 26.9-1	1.00
K_d	Wind Directionality	Table 26.6-1	0.85
G	Gust Effect	Sec. 26.11.1	0.85
C_f	Force Coeff. (cross-section / shape)	Fig. 29.4-1	1.3

Wind Loading

- ▶ Conservative assumptions in QwikPad FL Product Approval calculations
 - Direct wind loading normal to unit
 - Unit as a flat, solid surface (i.e., no wind passing through louvers/fins or deflecting off angled/curved surfaces) ($C_f=1.3$)
 - Open space, no blockages/walls/hills/etc... ($K_{zt} = 1.0$)
 - Sea level – 0 ft elevation ($K_e = 1.00$)
 - No consideration for effect of plumbing and wiring connections
- ▶ Rooftop Application
 - Vertical force (i.e., uplift) must be considered (See Sec. 29.4.1)
 - Increase in rooftop height increases Pressure Coeff. (K_z - see table)
 - Installation site may decrease Elevation Factor (K_e - see table)
 - Consideration to parapets and other obstructions may reduce wind speed

Equations

- ▶ *Total Wind Moment* = $F_{wind,unit} \left(\frac{h_{unit}}{2} + h_{pad} \right) + F_{wind,pad} \left(\frac{h_{pad}}{2} \right)$
- ▶ *Weight Moment* = $(W_{unit} + W_{pad}) \frac{width_{pad}}{2}$
- ▶ *Total Wind Load* = $F_{wind,unit}(A_{unit}) + F_{wind,pad}(A_{pad})$
- ▶ *Static Friction* = $\mu_s(W_{unit} + W_{pad})$