*Abstract: This document is an abbreviated engineering specification template for the Q Duct Pre-Insulated Outdoor Duct System. There are product specifications that are* ***(Optional)*** *and they are shown in red. Please make sure to remove unrequired product specifications from this document when finalizing your specification.*

1. PRODUCTS
	1. MANUFACTURERS
		1. Basis of Design
			1. Q Duct by AQC Industries; 2920 Centre Pointe Dr, Roseville, MN 55113; Tel: (651)-209-0050; Email: team@aqcind.com; Web: [www.aqcind.com](http://www.aqcind.com)
	2. PRE-INSULATED OUTDOOR HVAC DUCTWORK SYSTEM
		1. Pre-Insulated Outdoor HVAC Ductwork system:
			1. Q Duct System by AQC Industries
				1. Q Duct System for HVAC supply, return, and exhaust air ductwork as shown on layout drawings.
				2. System shall include pre-insulated panels, coupling systems, sealants, cladding and accessories to meet the following performance criteria.
			2. Ductwork Materials
				1. Pre-Insulated Duct Panels: UL 181 listed rigid thermoset phenolic duct panel

Minimum internal facing: 2.3 mil (60 micron) embossed aluminum

Minimum external facing: 7.9 mil (200 micron) embossed aluminum

* + - 1. Duct Connections
				1. Interlocking duct connections must exceed SMACNA Leakage Class 1.
				2. Connections that cannot meet or exceed SMACNA Leakage Class 1 (TDC/TDF, 4-Bolt Flange) are not permitted.
			2. Duct R-Value, Insulation Panel Layers, Nominal Wall Thickness
				1. R-12: Double Panel, 2.50” wall thickness: ***+ additional R-8.6 Sloped Roof Insulation***
				2. ***R-18: Triple Panel, 3.75” wall thickness: + additional R-8.6 Sloped Roof Insulation***
				3. ***R-24: Quad Panel, 5.00” wall thickness: + additional R-8.6 Sloped Roof Insulation***
			3. Design Pressure Reinforcement Specification
				1. Duct shall be reinforced to meet +/- 4” (1000 Pa) WG Pressure Class
				2. ***Duct shall be reinforced to meet +/- 7” (1750 Pa) WG. Pressure Class***
			4. Warranty
				1. Manufacturer shall provide a 10-year limited warranty for the Pre-Insulated Outdoor HVAC Ductwork system.
			5. Mounting System
				1. Factory supplied & attached external support rails on all straight ducts longer than 24” & depth greater than 24” and on all straight ducts with vertical rise greater than 6’.
				2. ***Factory supplied & attached external universal support rails on all straight ducts.***
			6. **Sloped Roof Water Shed**
				1. **Roof Slope: Minimum roof slope of ½” per 1’**
				2. **Roof Insulation: Minimum R-8.6 at 1.5” insulation thickness.**
				3. **Roof Cladding: UL 181 listed multi-layered 19.5 mil aluminum laminate cladding**
			7. Air Leakage Testing:
				1. Test in accordance with SMACNA HVAC Air Duct Leakage Test Manual on at least 10% of the total installed duct area, after all duct has been secured to the duct supports. Ensure duct system exceeds SMACNA Air leakage Class 1.