

# ICC-ES Report

# PMG-1405

ICC-ES | (800) 423-6587 | (562) 699-0543 | [www.icc-es.org](http://www.icc-es.org)

Issued 11/2016  
This report is subject to renewal 11/2017

EVALUATION SUBJECT:

**UNDERGROUND SINGLE WALL & PRE-  
INSULATED DOUBLE WALL DUCT FOR  
HVAC DIRECT BURIAL APPLICATIONS,  
SINGLE WALL PERRY 20S DUCTWORK,  
AND DOUBLE WALL PERRY 20S-IR  
DUCTWORK**

**DIVISION:**

23 00 00—HEATING, VENTILATING AND AIR CONDITIONING  
(HVAC)

**SECTION:**

23 31 00—HVAC DUCTS AND CASINGS

Report Holder:

**PERRY FIBERGLASS PRODUCTS, INC.**

5415 VILLAGE DRIVE  
ROCKLEDGE, FL 32955



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## ICC-ES PMG Listing

## PMG-1405



Effective Date: November 2016

This listing is subject to re-examination in one year.

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CSI: DIVISION: 23 00 00—HEATING, VENTILATION AND AIR CONDITIONING (HVAC)  
Section: 23 31 00—HVAC Ducts and Casings

### Product certification system:

The ICC-ES product certification system includes testing samples taken from the market or supplier's stock, or a combination of both, to verify compliance with applicable codes and standards. The system also involves factory inspections, and assessment and surveillance of the supplier's quality system.

Product: Underground Single Wall & Pre-Insulated Double Wall Duct for HVAC Direct Burial Applications  
Single Wall Perry 20S Ductwork  
Double Wall Perry 20S-IR Ductwork

Listee: Perry Fiberglass Products, Inc.  
5415 Village Drive  
Rockledge, Florida 32955  
[www.perryfiberglass.com](http://www.perryfiberglass.com)

### Compliance with the following codes:

2015, 2012 and 2009 *International Mechanical Code*® (IMC)  
2015, 2012 and 2009 *International Residential Code*® (IRC)  
2015, 2012 and 2009 *Uniform Mechanical Code*® (UMC)\*  
2013, 2010 and 2007 *California Mechanical Code*® (CMC)\*

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### Compliance with the following standards:

ICC-ES LC1014-2015, PMG Listing Criteria for Underground Plastic Air Ducts  
ICC-ES EG290, Evaluation Guideline for Underground Plastic Air Ducts  
ASTM E84-2015a, Standard Test Method for Surface Burning Characteristics of Building Materials  
UL 723 (10<sup>th</sup> Edition), Test for Surface Burning Characteristics of Building Materials  
ASTM C518-2010, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus

### Identification:

The Perry Fiberglass underground HVAC duct and fittings described in this listing are identified by a permanent label bearing the manufacturer's name (Perry Fiberglass) and/or trademark, the product name, model number and the ICC-ES PMG listing mark.

### Installation:

Installation of Perry Fiberglass underground HVAC duct and fittings must comply with the manufacturer's published installation instructions and the applicable codes.

Models:

**Underground HVAC Duct and Fittings:**

The Perry Fiberglass underground HVAC duct and fittings are an underground air duct and fitting system for use in forced-air heating and cooling systems in accordance with Section 603.8 of the IMC, Section M1601.1.2 of the IRC, or Section 602.0 of both the CMC and the UMC, as applicable.

Perry Fiberglass Products, Inc. Single Wall Perry 20S and Double Wall Perry 20S-IR ductwork is manufactured with filament wound thermoset resin. The single wall and double wall product is available in sizes from 2"Ø up to 168"Ø and all rectangular sizes. Standard fittings for each product include 90° elbows, 45° elbows, 90° tap, 45° tap, reducers, end caps, wyes, as well as custom fittings. The Perry Fiberglass underground HVAC ductwork and fittings are designed for 10 inches of water column pressure and 5 inches water column vacuum. This is in accordance with Section 603.3 of the IMC.

The ductwork have the following minimum wall thickness: 0.125" for ducts up to 20" in diameter, 0.187" for ducts 21" to 36" in diameter, 0.25" for ducts 37" to 60" in diameter, and 0.313" for ductwork above 60".

Surface Burning Characteristics: Filament wound fiberglass reinforced resin has a flame spread index of 25 or less and a smoke development index of 50 or less when tested in accordance with ASTM E84. Closed cell polyurethane foam complies with section 2603.3 of the *International Building Code*® and has a flame spread index of 25 or less and a smoke development index of 450 or less when tested in accordance with ASTM E84.

Thermal Resistance: The foam insulation has been tested in accordance with ASTM C-518. Double wall ductwork and fittings is manufactured with a closed cell polyisocyanurate foam sandwiched between the inner and outer layers. The double wall product is available in R5, R6, R7, R8, R10, and R12, however foam thickness can be adjusted to meet any required "R" value.

Conditions of Listing:

1. Designs using Perry Fiberglass underground HVAC duct and fittings must be limited to systems with a maximum air temperature of 150°F (66°C) at the discharge of the unit entering the duct system. Sizing must be in accordance with Section 603.2 of the IMC, Section M1601.1 of the IRC, or Section 601.2 of both the CMC and the UMC.
2. For the purposes of this evaluation, Perry Fiberglass underground HVAC duct and fittings must be installed underground or embedded. Above ground applications are outside scope of this report.
3. The design of concrete slabs with an embedded air duct is beyond the scope of this evaluation.
4. Underground air duct pipes located below the design flood elevation must be designed and installed to resist hydrostatic and hydrodynamic loads and stresses, including the effects of buoyancy, during the occurrence of flooding to the design flood elevation, in accordance with Section 603.13 of the IMC, Section M1601.3.8 of the IRC, or Section 604.6 of both the CMC and the UMC, as applicable.
5. The Perry Fiberglass underground HVAC duct and fittings are manufactured in Avon Lake, Ohio under a quality control program with annual surveillance inspections by ICC-ES.