



INSULFAST

The Ramset T3 InsulFast™ System



INSULATION FASTENING SYSTEM



Insulation Fastening System

FASTEN INSULATION IN ONE STEP

The T3 InsulFast™ System is 4 times faster than the traditional stick pin installation method. It allows the installer to attach insulation in one simple step without the use of adhesives or cutting spindle insulation anchors anymore.

ADVANTAGES

- Saves days over the traditional insulation fastening method saving time and labor costs.
- The tool allows you to fasten the insulation in tight spaces through pipes and sprinkler systems.
- Lower operator fatigue
- Fasten the insulation directly to concrete, hollow block, and steel studs. No need to glue and stick pin insulation anchors anymore.
- The T3FUEL can shoot more than 1000 shots before it needs to be replaced.
- Thermal bridging: 99.5% efficiency
- The fastening is consistent and clean looking.
- The system can be used year round: Unlike stick pins you won't be restricted by cold temperature or wet surfaces
- 1"-6" insulation pin capacity
- Automatic power adjustment

APPLICATIONS

MOST COMMON APPLICATION IS FASTENING INSULATION TO CONCRETE, HOLLOW BLOCK, AND STEEL STUDS



Exterior walls - Insulation to concrete

Exterior walls - Insulation to steel stud



Foundation walls

Parking garages



Heated floors

Balcony insulation

Block walls

Ceiling acoustical insulation

INSULFAST™ FASTENERS



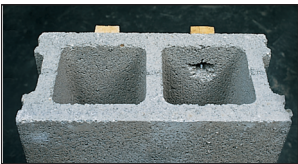
Integrated Cap

For improved thermal efficiency and esthetics

Flanges to ensure the insulation remains perfectly in place, the insulation panel won't flip around during the fastening process

Specially Shaped Shaft – Reduces friction and force required to insert fastener into insulation

Point designed to pierce most difficult insulation material with little effort

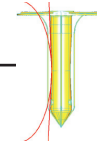
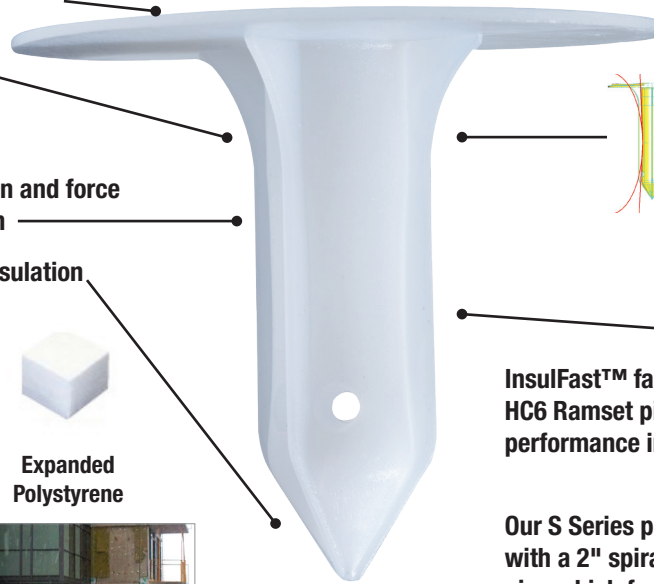


The InsulFast™ will not spall the hollow block like powder actuated fasteners.



Damaged insulation by wind loads using stick pin fasteners. InsulFast™ fasteners eliminate this problem.

Fastener provides 211 lbs. of ultimate tension capacity



Engineered curved design limits insulation compression which enables full thermal efficiency



InsulFast™ fasteners are equipped with the HC6 Ramset pin which provides exceptional performance in the hardest concrete

Our S Series pin is equipped with a 2" spiral steel stud pins which fastens insulation through exterior gypsum sheathing to exterior steel studs in one simple action.



FASTENER SPECIFICATIONS:

- Pin Material: Heat treated carbon steel
- Pin Finish: Mechanical Zinc Plated
- Washer Material: High Density Polyethylene (HDPE)
- 2-3/8" Holding Diameter
- The fastener assembly is clearly branded Ramset along with the length of the fastener assembly



SELECTION CHARTS:

FASTENERS FOR STEEL STUDS

PART NUMBER	DESCRIPTION	INSULATION THICKNESS	BOX QTY
IG625S	1" Insulation Fastener w/fuel	1" (25mm)	500
IG638S	1-1/2" Insulation Fastener w/fuel	1-1/2" (38mm)	500
IG650S	2" Insulation Fastener w/fuel	2" (50mm)	500
IG663S	2-1/2" Insulation Fastener w/fuel	2-1/2" (63mm)	500
IG675S	3" Insulation Fastener w/fuel	3" (75mm)	500
IG689S	3-1/2" Insulation Fastener w/fuel	3-1/2" (89mm)	500
IG6100S	4" Insulation Fastener w/fuel	4" (100mm)	500
IG6114S	4-1/2" Insulation Fastener w/fuel	4-1/2" (114mm)	500
IG6125S	5" Insulation Fastener w/fuel	5" (125mm)	500
IG6150S	6" Insulation Fastener w/fuel	6" (150mm)	400
T3IGT-6	T3 InsulFast™ Tool (6" Capacity)	-	1

PERFORMANCE TABLES:

STEEL STUDS

FASTENERS	ALLOWABLE/ULTIMATE PULLOUT LOAD LBS (kN)				
	Steel Gauge	22GA	20GA	18GA	16GA
IG625S - IG6150S	20/120 (0.09/0.53)	33/200 (0.15/0.89)	46/280 (0.20/1.25)	60/360 (0.27/1.60)	

CONCRETE

FASTENERS	CONCRETE STRENGTH PSI (Mpa)	ALLOWABLE/ULTIMATE TENSION LOADS Lbs (kN)
IG625S - IG6150S	3600-6500 (25-45)	35/211 (0.15 / 0.94)

HOLLOW CONCRETE BLOCK

FASTENERS	ALLOWABLE/ULTIMATE TENSION LOADS Lbs (kN)
IG625S - IG6150S	35/184 (0.15 / 0.82)

FASTENERS FOR CONCRETE AND CMU

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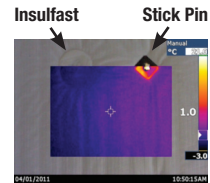
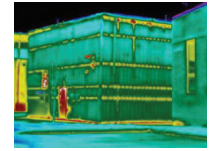


Thermal Performance of Building Envelope Assemblies

In buildings, when insulating material is interrupted by a highly conductive material, thermal bridging takes place. Examples of thermal bridges include steel pins that interrupt the continuity of batt insulation and go through heavily insulated exterior walls. Simply put, thermal bridges occur where differences in material thermal conductivities result in significant lateral heat flow; e.g., heat flowing along the surface of a wall and then flowing through the wall via a steel pins.

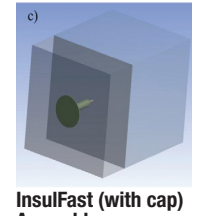
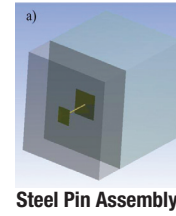
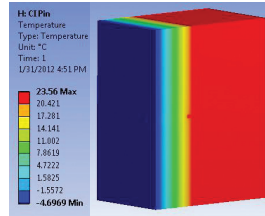
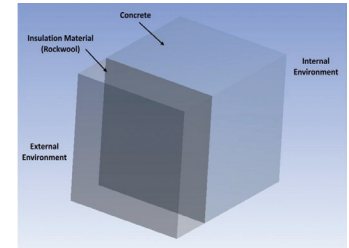
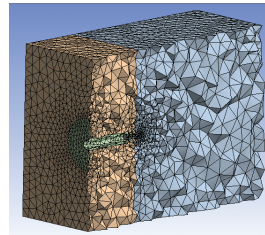
The infrared image to the right shows heat loss (i.e. yellow/red areas) through fasteners. The infrared camera doesn't reveal any heating transfer for the InsulFast™ (at -3°C) rather it highlights a high thermal bridging for the steel pin with a 21°C temperature.

The Calculations performed by the Advanced Thermal/Fluids Optimization, Modelling and Simulation (ATOMS) Laboratory, Department of Mechanical & Industrial Engineering, University of Toronto show that the InsulFast™ is over 99% efficient whereas the stick pins can downgrade the efficiency by more than 10%.



Suggested Specification

The fastener used to attach Insulation (Rockwool, Expanded Polystyrene, and Extruded Polystyrene) in to Solid Masonry, Hollow Concrete Block, and Steel Studs shall be Ramset InsulFast™ Fastener. The Ramset InsulFast™ Fastener shall be fastened using the Ramset T3IGT Gas Tool. The Ramset InsulFast™ Fastener must be made from High Density Polyethylene (HDPE) plastic and has a holding diameter of 2-3/8" (60 mm) with the Ramset logo marking.



		Insulation Thickness					
		1 in	2 in	3 in	4 in	5 in	6 in
Reference	U – Factor (W/m2 °C)	1.1786	0.7122	0.5103	0.3976	0.3257	0.2758
	Efficiency (%)	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Stick Pin	U – Factor (W/m2 °C)	1.2422	0.7706	0.5597	0.4397	0.3621	0.3078
	Efficiency (%)	94.88%	92.42%	91.17%	90.43%	89.94%	89.59%
InsulFast™	U – Factor (W/m2 °C)	1.1845	0.7162	0.5132	0.3999	0.3276	0.2773
	Efficiency (%)	99.50%	99.45%	99.44%	99.43%	99.42%	99.42%



Over used stick pin installation. This increases the thermal bridge and reduces thermal efficiency.

These thermal bridges contribute to a multitude of problems, including, but not limited to:

- added energy use during heating and cooling seasons
- interior surface condensation which leads to:
 - high humidity levels that can lead to unusual concentrations of airborne contaminants and microbial growth
 - rusting issues that can damage the structure