

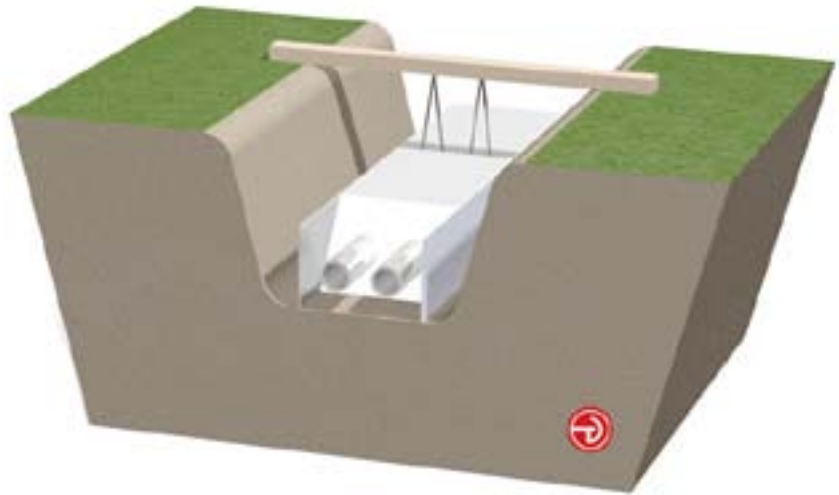
DRITHERM™ PRODUCT DATA SHEET

Product Name:

Dritherm™
Underground Insulation

Manufacturer:

Dritherm International Inc.
31 Fairfield Place
West Caldwell, NJ 07006
973-808-2255
www.dritherm.com



Product Description:

Dritherm™ is a field applied pour-in-place powder type underground insulation product. This insulation formula has been on the market since the late 1960's first sold under the brand name Protexulate* and reintroduced as Dritherm™ in 1991. Dritherm™ is ideally suited for underground steam, hot, and chilled water systems. Typically stocked and drop shipped from one of (5) factories it is available on a short basis. Typical customers include colleges, universities, military bases, hospitals and housing projects.

Dritherm™ is used to insulate underground thermal piping / tanks / structures. It is poured around underground pipes to isolate them from moist / wet soils while providing efficient thermal insulation. Dritherm™ has been used successfully for district heating / cooling applications including: steam, condensate return, hot and chilled water. It can be used for either new construction projects as well as for insulating existing systems that have experienced energy loss due to corroded or damaged piping.

Features:

1. **Saves Time & Money:** Quick delivery and at considerably less expense than other methods.
2. **Self Compacting:** Does not require vibration to consolidate.
3. **Insulates Hot & Cold:** One product insulates hot water, steam, and chilled water pipes.
4. **Environmentally Safe:** Typically landfill disposable subject to local state and national laws.

Composition and Materials:

Dritherm™ is manufactured from a proprietary formula of treated calcium carbonate.

Limitations:

Dritherm™ can only be used around underground pipes, tanks, and structures. It is not intended for use on above ground applications. It should not be used where moving or upward pressure from a water table or other sources will be present. Sand, gravel, or other coarse materials are not permitted for use as trench base, walls, backfill or any other portion in direct contact with Dritherm™. Product selection, installation, system design, site condition review are the ultimate responsibility of the engineer of record and/or the owners consultant/representative. Please review installation instructions carefully prior to placing an order. Anchors, guides, thermal cushions, and anti-wicking grease may be required and should be considered prior to attempting an installation. Consult factory for details.

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Physical Properties:

Approximate Density [lbs/ft ³] - ASTM D2435			
Location	*No Load Density	Under 200 lbs/ft ² Load	Under 400 lbs/ft ² Load
Adams, MA	62.2	69.6	73.8
Lucerne Valley, CA	60.2	69.2	70.2
Marble Falls, TX	57.2	65.1	68.4
Marblehill, GA	63.6	75.2	81.4
Quincy, IL	54.9	64.6	71.4

Installed density varies depending on applied load. *Initial density determined by pouring dry material into consolidation ring of known volume with no compactive effort.

Approximate Thermal Conductivity (ASTM C177)		
Factory	100 F	300 F
Adams, MA	0.6520	0.8137
Lucerne Valley, CA	0.5947	0.6909
Marble Falls, TX	0.6079	0.7783
Marblehill, GA	0.5823	0.6936
Quincy, IL	0.6191	0.8590

UNITS: BTU-IN/HR/FT²/F
Thermal conductivity will vary depending on installed density, temperature, and applied load

Installation:

Dritherm™ is installed by pouring the product into the trench and compacts under the weight from backfill with no mixing or mechanical compaction. See installation instructions for details.

Availability:

Dritherm™ is drop shipped from your nearest factory in palletized form (45) 50 lb bags per pallet or 2400 lbs. super sacks. Stock is maintained and ships from Adams, MA., Quincy, IL., Lucerne Valley, CA, Marble Falls, TX, or Marblehill, GA.

Storage, Handling, and Disposal:

Dritherm™ does not have a shelf life, and should be stored in a dry place to protect paper bags from damage. Super Sacks are weather resistant. Personal protective gear including gloves, safety glasses, and dust mask shall be worn when handling Dritherm™ (see MSDS for details). Excess Dritherm™ may typically be disposed of in municipal landfills subject to local regulations.

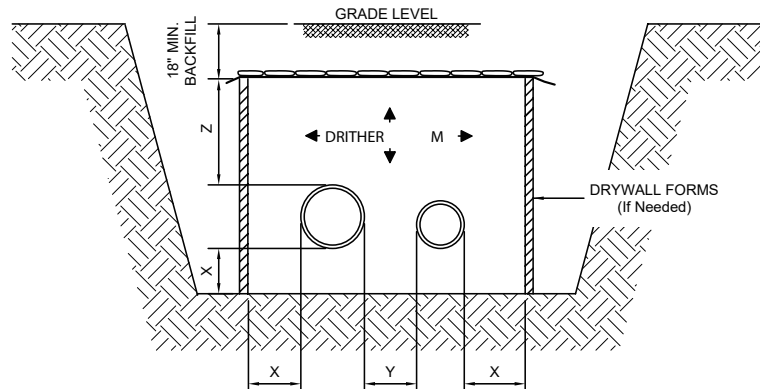


TABLE USED FOR ESTIMATING/PURCHASING DRITHERM MATERIAL. SEE INSTALLATION INSTRUCTIONS FOR DETAILS.

RECOMENDED INSTALLED DIMENSIONS [INCHES]															
Pipe Dia.	TEMPERATURE RANGE														
	35 to 100 F			101 to 230 F			231 to 305 F			306 to 400 F			401 to 480 F		
	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z	X	Y	Z
1.315	3	2	6.5	3	2	6.5	3	2	6.5	3	2	6.5	4	2	8.0
2.375	3	2	6.5	3	2	6.5	3	2	6.5	4	2	8.5	4	2	8.5
3.5	3	2	7.0	3	2	7.0	4	2	9.0	4	2	9.0	4	2	9.0
4.5	4	2	9.0	4	2	9.0	4	2	9.0	5	2	11.0	5	2	11.0
5.563	4	3	9.0	4	3	9.5	4	3	9.5	5	3	11.0	5	3	11.0
6.625	4	3	9.5	4	3	9.5	4	3	9.5	5	3	11.5	6	3	13.5
8.625	4	3	10.0	5	3	12.0	5	3	12.0	6	3	14.0	6	4	14.0
10.75	4	3	10.0	5	3	12.5	6	3	14.5	6	3	14.5	6	4	14.5
12.75	4	3	10.5	6	4	14.5	6	4	14.5	7	4	17.0	7	4	17.0
14	5	4	12.5	6	4	15.0	7	4	17.0	7	4	17.0	7	4	17.0
16	5	4	13.0	6	4	15.0	7	4	17.0	8	4	19.5	8	5	19.5
18	5	4	13.0	7	4	17.5	7	4	17.5	8	4	19.5	8	5	19.5
20	5	4	13.5	7	4	18.0	8	4	20.0	9	4	22.0	9	5	22.0
24	5	4	14.0	7	4	18.5	8	4	20.5	10	4	24.5	10	5	24.5

Z dimensions reflects Dritherm usage before backfill to account for up to 30% compaction.

Look Up Table Design Conditions:

Thicknesses were determined using Dritherm properties under 400 PSF compressive loading. Compaction occurs during backfill and compression will vary depending on installed conditions. Consult factory for application specific recommendations. User is ultimately responsible for calculating and verifying installed conditions.

Terms, Conditions, & Disclaimers:

Representations of physical properties are the result of tests conducted by independent, certified third-party laboratories. Test reports available upon request. Information contained herein is provided as a convenience and for informational purposes only. Physical properties are subject to manufacturing variations, raw material variations, and variations in installed conditions. All products supplied including all recommendations and technical support is provided for convenience only. Product selection, installation, system design, site condition review are the ultimate responsibility of the engineer of record and/or the owners consultant/representative. This data sheet is subject to change without notice and supersedes all previous versions.