



# AMOL MINECHEM LTD

(Formerly known as AMOL DICALITE LIMITED)

## Cryogenic Insulation EXPANDED PERLITE

a cost effective insulation for cryogenic,  
high & low temperature application.



# Cryogenic Insulation

## EXPANDED PERLITE

### INTRODUCTION

**EXPANDED PERLITE** is an economical insulation for cryogenic, high and low temperature applications. It is widely used because of its low Thermal Conductivity, cost, ease of handling, non-combustibility and low moisture retention. Perlite Insulation provides dependable results at temperatures ranging from  $-273^{\circ}\text{C}$  to  $+650^{\circ}\text{C}$ .

### DESCRIPTION:

Raw Perlite is a siliceous volcanic glass, containing 2 to 5 percent combined water. When rapidly heated to the proper temperature, the volatilization of the water, coincident with the softening of the glass, causes the Perlite to suddenly expand or "pop" 4 to 20 times into light weight cellular particles or "bubbles". These bubbles account for the excellent insulating properties and light weight of Expanded Perlite. It is because of these unique properties that Perlite has found wide acceptance in the insulation of cryogenic and low temperature double wall storage tanks, cold boxes, shipping containers and food processing facilities. In addition to its thermal properties, Perlite is relatively low in cost, easy to handle and non-flammable.

### CRYOGENIC INSULATION APPLICATION WITH PORTABLE PLANT

Amol Minechem Limited has 5 Portable Plants, designed specifically for site expansion work based on the experience gained through over 40 years of doing this work in the field. These Portable Plants incorporate the most reliable technology developed over many years of experience. All these Portable Plants are capable of working

anywhere in the world. The Portable Plants are designed in a modular manner. They are shipped in our own 20' containers. Erection and dismantling of plant takes minimum time. We have specially designed internal vibration system for double wall storage tanks like LNG that is successfully developed and proved very efficient. We can give our clients just about any level of forced settlement they require to pre load the resilient blanket on these tanks.

### 4 PLANT FILLING 2 LNG TANKS SIMULTANEOUSLY:



Amol Minechem Limited has insulated number of Double Wall Storage Tanks for LNG, Ethylene, Propylene, Propane, Butane, LOX, LIN, LAR, LPG and Cold Boxes (ASUs) in India, Angola, China, Egypt, Qatar, U.S.A. and other countries.

Amol has experienced people ("Perliters") who operate a fixed Perlite Plant at our factory and operate the Portable Plants since 1990 to execute cryogenic insulation jobs worldwide. The company has a large and highly trained team, is very well equipped and well trained to execute jobs in time, on schedule and in budget.

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## EXPANDED PERLITE

### FORCED COMPACTION:

AMOL used special VIBRATION TECHNIQUES pneumatically operated for achieving compaction of material which slows down the settlement rate in tanks. The vibration of tank can be done externally or internally depending on the design of the tank.



Internal Vibration Machine

### PRESSURE POT

For volumes that cannot justify a portable plant job or there are other constraints we can fill Expanded Perlite in the equipment using specially designed pressure pot that pneumatically conveys upto a height of 60 meters. Perlite is supplied in bags. Filling is done through hoses in an uniform manner. We have multiple pressure pots so depending on the size of the job we can depute required number to execute the job as per client schedule.



### PERLITE REMOVAL

Removing Perlite from existing equipment requires expertise and special equipment. Amol has 'stripping' plant to remove perlite using pneumatic system avoiding dusting during the removing process. Disposal of perlite is a problem being a light weight material. We have techniques that will reduce the volume for easy disposal. Our system removes perlite from tanks or ASU. Keeping all safety and environmental factors in mind we remove perlite using appropriate methods depending on the situation and client needs.

### CHARACTERISTICS:

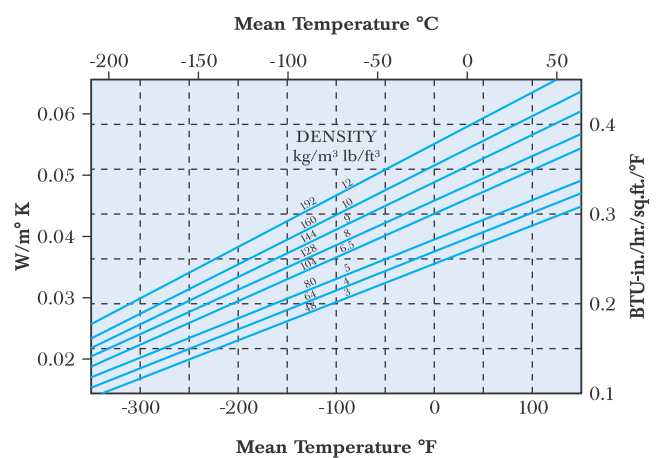
**DENSITIES** : Available in a range from 30 to 100 Kgs/M<sup>3</sup>. Typical compact density ranges from 55 to 75 Kgs/M<sup>3</sup> for low temperature application.

**GRAIN SIZE** : Particle size varies from 1.18 to 0.150 mm depending on the grade required.

**MOISTURE**: Free Moisture maximum 0.5%.

**ORGANIC CONTENT**: Maximum 0.1%.

**THERMAL CONDUCTIVITY** : Ranges between 0.01 and 0.06 W/m<sup>2</sup>K depending upon density and temperature, (refer graph)



**FIRE RESISTANCE**: Perlite is non-combustible.

**SAFETY** : Expanded Perlite is classified as low risk product.



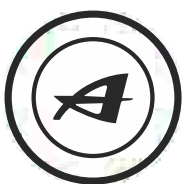
# EXPANDED PERLITE IS USED TO INSULATE...

- ◆ Air Separation Unit/Cold Box
- ◆ Double wall storage tanks containing LNG, Ethylene, Propylene, Propane, Butane, Ammonia, LPG, LOX, LIN, LAR, Vessels And Ships etc.
- ◆ Vessels under vacuum insulation.



## OTHER SPECIALITY PRODUCT AND APPLICATIONS

- ◆ FILTERAIDS (Industrial Filtration)
- ◆ RIGID PIPE SECTIONS & PANELS (Hot Insulation)
- ◆ PERLITE ORE (Metallurgical)
- ◆ SUPER SOIL (Horticulture) FILLERS



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