PERLITE CHIMNEY LINING SYSTEMS SOLVE CONDENSATE PROBLEMS IN OLD AND NEW CHIMNEYS

Condensate, which can form in chimneys when hot gases impinge on cold chimney linings, can create two serious problems. The first is the formation of combustible tars on chimney linings that may cause chimney fires. The second is the formation of sulphite solutions that can attack chimney mortar which can lead to leakage, staining and possibly even chimney collapse.

Other reasons for relining chimneys are to seal broken or cracked masonry work and to improve draft by reducing flue size.

Why Perlite?

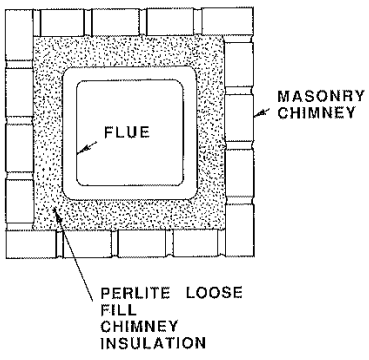
Expanded perlite is an ideal material for insulating chimneys as it is inorganic, does not support combustion and exhibits excellent thermal insulating properties over a wide range of temperatures. In addition, it is not affected by most acids. Perlite chimney insulation may be mixed oil-site but premixed material is commonly used to ensure consistent quality control. For new construction, perlite loose fill chimney insulation may be used between the flue and the body of the chimney.

Perlite is not a trade name but a generic term for naturally occurring siliceous volcanic rock. The distinguishing feature which sets perlite apart from other volcanic glasses is that when heated to a suitable point in its softening range, it expands from four to twenty times its original volume.

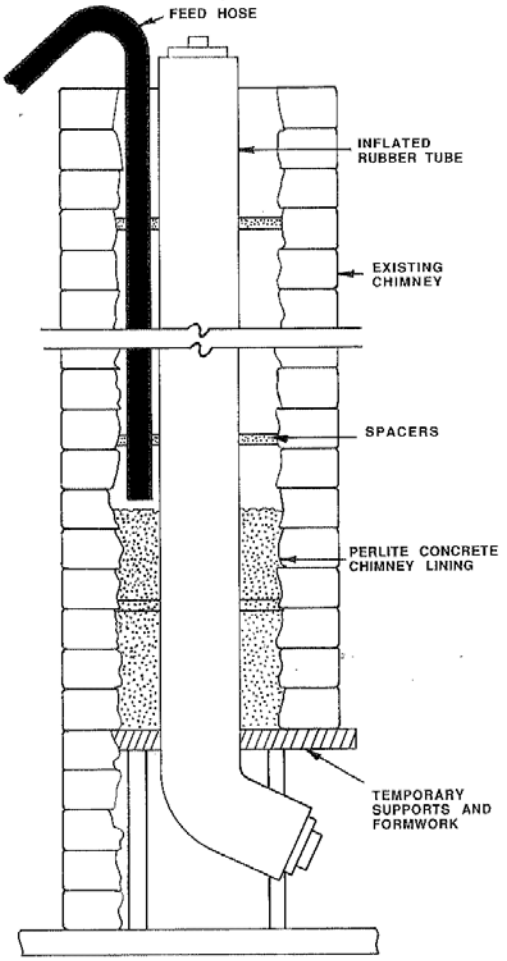
Expanded perlite can be manufactured to weigh from 2 lb/ft^3 (32 kg/m^3) to 15 lb/ft^3 (240 kg/m^3) making it especially suitable for use in insulating applications. Perlite is used in the manufacture of lightweight fire resistant concrete for chimney linings, cryogenic, low temperature and high temperature insulations, lightweight perlite concrete, insulating board, insulating plasters, loose fill insulation for masonry walls and chimneys and as underfloor insulation.

Reconditioning Chimneys

Pumped chimney lining is often used in repair or relining of existing chimneys. In this type of installation, a rubber tube is inserted the length of the chimney to be relined. The tube is supported and sealed off in the firebox or at the base of the chimney and the tube is inflated to the desired diameter. Both round and elliptical tubes are available depending on the configuration of the chimney. Spacers maintain the tube in position in the chimney. Perlite chimney lining is pumped into the space between the tube and the inside of the chimney. When the mix has set for a minimum of 12 hours, the tube is deflated and withdrawn and the top of the chimney is capped off with mortar. As there are many variables involved in a proper installation, trained personnel should be used to prepare mixes and to reline chimneys. In all cases, the procedures and mix formulations employed should meet applicable building requirements.



Typical chimney lining using perlite loose fill chimney insulation.



Typical perlite concrete chimney lining pumping operation.

New Construction

Lightweight perlite loose fill insulation or a lean mix of expanded perlite and cement may be used to insulate new masonry chimneys as they are being constructed. In this type installation, the perlite is poured or pumped between the flue and the body of the chimney as it is being constructed. This same type of construction may be employed when metal flues are being used. In addition to providing excellent insulation, the metal liner is made more rigid.

Expanded perlite can also be used with other binders in the manufacture of prefabricated chimney liners.

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