

## SERVICE WORKS

## "UP ON TOP" NEWS

## Cold Applied Roofing - Around Since The Dawn of Time

Cold-applied roof coatings and cements have been successfully used as a part of roofing system for well over 50 years, gaining both recognition and market share.

The use of cold-process coatings dates back to at least the year 3000 BC, when Egyptians began using varnishes and enamels made of beeswax, gelatin and clay—and later protective coatings of pitch and balsam to waterproof their wooden boats. Around 1000 BC, the Egyptians created varnishes from gum Arabic.

Independently, the ancient Asian cultures developed the use of lacquers and varnishes and by the 2nd century BC, were being used as coverings on a variety of buildings, artwork and furnishings in China, Japan and Korea. The Early Greeks and Romans also relied on paints and varnishes, adding colors to these

coatings and applying them on homes, ships, and artwork.

In addition, most of the earliest recorded dwellings in Europe, Asia and the Americas used various cold-applied mixtures of clay, soil and water, as well as stucco pastes of water, sand, and limestone or gypsum to waterproof their roofs and walls.

The development of more sophisticated protective coatings appears to have begun in the latter half of the 17th century, when a German chemist found a way to use the stickiness of coal tar as a protective coating on woods and ropes. During the 19th and early 20th centuries, scientists developed a variety of new organic, inorganic and synthetic materials for use in coatings, binders and solvents. Perhaps the most dramatic advance in coating properties has come in the past 40 years, with the development of polymers.

During the middle of the 19th Century, a new type of roofing was created by soaking rag felt in tar (pine tar or coal tar) and layering these felts with moppings of hot tar and covering the assembly with gravel. The tar was eventually replaced by asphalt, and the rag felt with fiberglass mat to create the modern Built-Up Roof (BUR). For the better part of a century, if a low-slope roof was called for, the hot-applied Built-Up Roof was the only choice. In the middle part of the 20th century, as roof coatings became more popular, someone discovered that cold-applied roof coatings could be used to adhere the plies of roofing felt, and the use of hot asphalt and roofing kettles could be avoided. The first cold-applied membrane roofing system was invented.

Roofing technology has evolved rapidly since then, and there are dozens of different materials that can be used to create a roof today. Cold applied roofing systems have advanced in step and are more popular today than ever.

**Cold-Process Built-Up Roofing System** - This type of roof can now be constructed a variety of ways. The predominant technique is to use heavyweight asphalt coating fiberglass "base" sheets and adhere them with solvent-borne asphalt adhesives in multiple plies.

**Adhesive Application of Modified Bitumen** - Perhaps the fastest growing segment of cold-process roofing is the application of modified bitumen roofing in bituminous cold-process adhesives. For obvious safety reasons, use of cold-applied roofing has provided an attractive alternative to the use of hot asphalt or open flame. These roofs typically have a mechanically attached base sheet, and one or two plies of modified bitumen membrane installed in bituminous adhesives.

**Liquid-Applied Monolithic Membrane Systems** - A third type of cold-applied roof now exists which blurs the line between roof coating and roof membrane system. That is the liquid-applied monolithic roof system. Typically made of high-tech polymeric resins such as urethanes, or bitumens which have been modified with polymers such as SEBS, these roof are applied as a liquid and may not rely on reinforcing material, but cure to form a tough, rubber-like membrane. These types of roof are monolithic (no seams) and are typically considered self-flashing.



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