



## BUILT-UP ROOFING

Johns-Manville established the Built-Up Roofing Systems Institute to offer a definitive and objective training school in the design and technology of built-up roofing systems. The following excerpts are taken from the opening statements from the course director, J. C. Robinson.

Blistering is probably the most common roofing problem and interply blistering is the most common type. Well perforated felts, proper bitumen application temperatures and thorough brooming of felts immediately after placement will prevent most of this problem.

Blistering between the membrane and the substrate is most common over wet decks, deck fills or insulated decks where a vapor barrier has been installed. Proper venting is essential. Edge venting of the structural deck will usually provide sufficient relief of vapor pressure. Application of venting felts over fill with edge venting at the periphery is more positive. Vapor pressure relief vent stacks through the membrane is recommended by several lightweight concrete fill manufacturers.

Splitting of the roofing membrane is usually caused by structural or thermal movement. Place expansion joints in the roofing system: at each construction or expansion joint in masonry or steel; at approximately 200-foot intervals; each intersection where the roof changes direction; the intersection between different types of roof deck materials; between existing roofs and new additions.

Poured gypsum and lightweight concrete decks are subject to cracking. Wood and structural wood fiber decks change dimension with changes in moisture content. When these decks are used, attach the first ply of roofing membrane to provide for the movement of the deck and to prevent the splitting of the membrane. Mechanical attachment should be the first choice; when the deck will not accept a satisfactory mechanical fastener, spot mop or strip mop.

The effect of large changes in temperature can be minimized by:

1. Dividing large roof areas into smaller ones by proper use of expansion joints.
2. Running the roofing felts in the same direction as the long direction of the structural deck.
3. Butting the insulation units tightly, using two layers of insulation with joints broken in both directions whenever possible.
4. Making sure, especially in cold climates, that all components are firmly attached to each other.
5. Fastening the membrane to wood nailers at the periphery of the roof.