temperature plus large sources of radiated heat have been met by a suit of quilted material faced with aluminized cloth, a helmet with an infrared-reflective glass faceplate, and a self-contained air supply of compressed gas With such an outfit, men have made emergency repairs in kilns, remaining almost indefinitely under temperatures up to 1,000 F. For brief periods, they can work in temperatures of 1,500 F, and momentary exposures to environments of 2,000 F.

Relief to employees performing routine maintenance or inspection work in areas of high ambient temperature has been obtained with refrigerated suits One type carries a supply of dry ice in the top of the helmet. Another gets refrigerated air from a portable refrigeration unit, this air being distributed about the wearer's body through air channels Tests in 150 F to 200 F ambient air temperature have been reported in which the air inside the suits was maintained at 80 F to 100 F for extended periods. Other methods include use of liquid air, portable heat exchangers, or vortex devices.

In less extreme and more common exposures, the body should be covered as much as possible, to protect against radiant heat Clothing should be light in weight, loose-fitting, and porous One-piece coveralls are better than two-piece clothing. Except for psychological reasons, the color is unimportant, because in the infrared region of the spectrum white and black are equally absorptive A light-weight, porous hat should be worn, such as a broad-brimmed tropical helmet covered with aluminum foil, because radiant heat is particularly uncomfortable when it falls on top of the head

If there is a high radiant heat exposure on one arm or leg, on the back or some other particular area, aluminum foil can be pasted over this spot of the clothing to give local protection Some plants keep a supply of aluminum foil on hand, and use it liberally wherever radiation screening is needed When heat can be "felt" in some direction, that is a sign that radiation screening will help Infrared-reflective hand cream is also available for use at certain specialized jobs. Fig. 28-24 shows how it can be spread on cotton work gloves to produce good results

When the problem is high air temperature, the remedy is *ventilation*—to introduce quantities of outside air at lower temperature This then dilutes the inplant heat "contaminant" A thorough job of radiant heat shielding will often directly lower the convective load, because there will be fewer hot surfaces in the plant to warm the room air as it circulates over them

One successful installation* consisted of reflective aluminum curtain walls hung from the roof so as to surround a glass furnace. The hanging wall extended downward to three feet from the floor, and made in effect a flue over the furnace The roof was then "removed," by installing slot-

Fig 28-24 Infrared-reflecting hand cream on cotton work gloves.

Courtesy Owens-Illinois Glass Company

shaped ventilators and power-driven fans in it. Radiation is blocked from the men, and a stack action is set up that keeps the heated air from circulating about the interior of the plant.

When heat is to be controlled by general

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*Dunn, Karl L "Design and Control Measures for Radiant Heat Exposures" *Transactions of Chemical-Engineering Conferences, 15th Annual Meeting.* Bulletin No. 18 Industrial Hygiene Foundation, 1950