curved type, since spaces between blades soon become filled with paint

Tempered makeup air to replace air exhausted by the booth should be supplied This is needed for any exhaust system, but deserves special attention here because some spray booths remove huge amounts of room air, which in turn should be supplied directly to the booth or to the area from which the air is drawn into the booth

Routine and scheduled cleaning and maintenance of spray booths are a must Flammable materials when allowed to accumulate increase the fire risk Paint in ducts also cuts down needed air flow There are several products on the market which can be used to cover the inside of the booth, either sprayed or brushed on, which successfully prevent the sticking of the overspray to the booth surfaces Some of these are easily strippable coatings

In high production painting much solvent is lost by evaporation from the wet painted surfaces If these surfaces are stacked out in the shop to dry, they may present a health and fire hazard A separate ventilated area should be provided for preliminary drying of the finished materials before they are sent to the ovens for baking

Where the production is not high, the material can be left in the booth for preliminary drying *In no instance should finished material be stacked in front of the booth so that the air flow is from the freshly finished material to the operator*

If the booth is used for welding, a heavy canvas curtain should be placed around the front of the booth to safeguard the eyes of others in the room from the ultraviolet rays of the welding arc

Dusts from some of the materials used in metallizing are explosive if finely divided and suspended in air in a critical concentration When collecting dust from metallizing, it is sometimes necessary to provide wet dust arrester units back of the metallizing booth

Fume control for electric welding

Movable exhaust hoods are needed for most indoor welding applications, and are a must when welding potentially toxic materials such as lead-containing or lead-painted metals, and beryllium alloys Except for production spot welding done at some sort of fixed jig, a welder usually travels over a wide area and this necessitates some arrangement of flexible or movable piping

The hood itself can have a rectangular face with a flared section to which the duct is connected, thus giving a streamlined air flow Normally the hood is surrounded on all four edges by a 3-in flange The breadth of the face and the amount of the air flow exhausted should be such that fumes will be removed from the welding arc over the length of weld formed during the consumption of one welding rod The capacity of the exhaust, therefore, should be sufficient to "reach" laterally over one-half the length of a weld of this distance

Flexible metal duct branches or solid sections with swivel joints and counterbalances permit easy relocating of the hood A duct branch should not be less than 3 in in diameter and should handle at least 200 cfm Larger branches and higher air flows should be used whenever possible Face velocities can exceed 1500 fpm (average) and duct velocities should assure a sufficiently high air flow into the hood to control fumes at the point of generation (usually several inches away from the hood face), as well as avoid settlement in the duct Specific figures for ventilation based on distance from welding arc are given in Chapter 31, "Welding and Cutting"

Dust control in foundries

Foundries offer many difficult problems in dust control, particularly in the shake-out and cleaning rooms Dust at the shake-out in a hand foundry that processes small castings can be adequately controlled by wet methods, with the castings removed from the sand before the sand dries out enough to form a great deal of dust

In a more mechanized foundry the shake-out generally can be covered by a fairly tight enclosing hood if the flasks are small enough to be handled on conveyors, the major part of the exhaust should be taken from overhead to utilize the thermal circulation of air over the hot metal When the flasks are so large that they must be handled by cranes, a side hood on the shake-out grate is about the only possible choice unless the whole operation can be enclosed and isolated