above, and might be further improved if riffles or cleats could be built in, over which the material would cascade, so there would be practically *no free fall.* Requirement (3) can be met by providing a generous enclosure around the skirts on the belt at the foot of the chute, with the single exhaust hood located well above the belt This keeps the air velocity at the belt level so low that coarse, useful particles will not be picked up. An exhaust connection is rarely required at the top of the enclosure However, if the material falls *directly* to the conveyor, a second exhaust connection should be provided at the back of the chute, because dusty air dislodged behind the impact zone cannot be captured by a single hood at the front without dragging coarse particles into the air stream

Breaking the free fall of material when it is transferred (from belt to belt, elevator to belt, chute to bin, etc ) results in economies. "Choke feeding," the coning up of material under a discharge point, can often control the dust so that no exhaust hood is required. As an example, a hopper-bottom car might dump into a track hopper at the bottom of which is a screw conveyor which takes the product to some other point If the material is discharged from the car at a faster rate than it is removed by the screw conveyor, it will cone up under the car hoppers. The operation will then be essentially dustless, provided stray cross breezes are screened off This is a far superior method of dust control than exhaust ventilation

Several states have codes, copies of which should be in each local plant, as of course, their requirements must be met As an example, following are requirements of New York State Industrial Code Rule No. 34 (1942) These have been widely reprinted, appearing, for example, in the ACGIH manual *Industrial Ventilation.*

1. Belt conveyors—hoods at transfer points.
   a) Belt speeds under 200 fpm 350 cfm per foot of belt width, at least 150 fpm through openings
   b) Belt speeds over 200 fpm 500 cfm per foot of belt width, at least 200 fpm through openings
   c) Minimum duct velocity 3,500 fpm
   d) Enclose transfer point as much as possible.
2. Bucket elevators.
   a) For casing only· 100 cfm per square foot of casing cross section, at least 200 fpm through all openings
   b) Minimum duct velocity 3,500 fpm.
   c) Take-off at top for hot materials, and at top and bottom if elevator is over 30 ft high, otherwise, optional.
3. Bins—closed tops
   a) Through open area at feed points. 150 to 200 fpm, but not less than 0.5 cfm per cubic foot of bin capacity
   b) Locate the exhaust duct at a point remote from hole through which bin is filled, to reduce pickup of coarse particles
4. Screens—vibrating, flat deck
   a) Top of enclosure completely surrounding screen 200 fpm through all hood openings, but not less than 50 cfm per square foot of screen area.
5. Barrel and bag filling
   a) Semicircular slot around rim of barrel at least 100 cfm per square foot of barrel top
   b) Cover type feed spout and exhaust duct attached by flexible connection to cover that fits over barrel during filling at least 75 cfm
6. Mixers
   a) If mixer body is stationary, attach hood to it, and exhaust at least 150 cfm per square foot of open hood face. Vertical paddle- or propeller-type mixers can often have a circular cover installed, with exhaust duct in one half, and the other half hinged so it may be raised during filling
   b) Rotating mixers may either have their filling and dumping holes hooded with local exhaust hoods, or may be placed inside a booth, air velocity through open face of booth to be 100 to 150 fpm
7. Skip hoists.
   a) Either install local exhausts at filling and dumping points, or completely enclose the skip and its track, and exhaust the enclosure so that all openings will have an inward air velocity of at least 150 fpm.
8. Scales
   a) Bench scales are generally placed inside a hood having one open face Floor scales may have a booth around them. On both, air velocity through openings should be 100 to 150 fpm