

STORAGE & HANDLING OF **ABRASIVES**

The handling of coated abrasives is sometimes neglectful. Abrasives are often thought of as being imperious to rain, heat, cold and rough handling, but this is not the case.

Oftentimes, there is no special room set aside for proper storage of abrasives. An ideal storage room is one in which all the walls are inside partitions, rather than against any outside walls of the building. Abrasive should be kept away from windows and any direct heat source. Air-conditioned rooms are recommended for all users with large abrasives inventory.

Coated abrasives (and bonded abrasives as well for that matter) should not be stored on concrete floors or near any area of dampness. If the abrasives are to be stored for any length of time, it is strongly advised to store them in the original packaging or containers. Belts which are already out of the package should be rolled up and stored on end on a shelf.

Humidity

Relative humidity is an important factor in the transport and storage of coated abrasives. Optimum conditions are 35% to 50% relative humidity (45% is ideal) at a temperature range of 60° to 80° F (70° is ideal) or 18° to 26° Celsius.

Problems arise as soon as the relative humidity changes. An example of such a change is the beginning of the heating season when the humidity in heated rooms drops by 10% to 15%. The other extreme is after a lengthy period of rain or foggy weather, when the relative humidity rises to 80% or more. Coated abrasives are often not given sufficient time to become equalized to the altered conditions during the transitional period and therefore perform less than satisfactorily.

If the relative humidity increases, so does the moisture content of the backing and bonding of the coated abrasive. Productivity and rate of output diminishes. The reduction can be between 50% and 100% with glue-bonded products and up to 25% with resin-bonded abrasives.

Coated abrasive backings (paper, cloth, fibre) respond to humidity changes at different rates than the bonding material (resin or glue). Consequently, the backing material alters in shape at a different rate than the bonding material. This difference causes overall distortion in the shape of the abrasive product. High relative humidity causes the coated abrasive to curl in a concave manner grit side up (curling). Low relative humidity causes the products to curl in a convex manner (bowing/arcing). Additionally damp air can cause the backing to become "flabby", which in turn causes creasing, loading and premature grit loss (particularly on glue-bonded products). Low humidity can cause product brittleness and lack of flexibility.

Belt Handling

Abrasive belts, particularly wide belts, should be removed from the original packaging 24 hours prior to being used. During that period the belts should hang on special conditioning racks near the machine on which they will be run. This period will ensure that the belts have adjusted to ambient temperature and humidity conditions as well as removing any "set" in the material from packaging. For wide belts this conditioning is crucial. These racks can be easily constructed using level wall bracket hangars (wooden dowels with 4" diameters may also be used), covered with a cardboard or other non-metallic core, preferably at least 4" in diameter and at least 4" away from the wall. Using too narrow hanger cores may damage the bond or backing of the abrasive belts.

Bonded Abrasive Storage

Bonded abrasive items should be stored in original packaging, flat on a shelf or in a cabinet away from direct sources of heat and dampness. They should never be hung on peg boards as this allows heat and humidity fluctuations access to both sides of the wheels increasing the chances that the wheel integrity will be compromised.

SAFETY

With any abrasive, coated or bonded, all normal safety precautions should be followed. These might include the wearing of safety glasses or masks, making sure machinery guards are intact, the use of dust collection systems, wearing of gloves etc. Abrasive items can injure you if you are not properly protected and your machinery is not properly guarded!