

## **What is VINYL?**

Polyvinyl chloride (colloquial: polyvinyl, vinyl; abbreviated: PVC) is the world's third-most widely produced synthetic plastic polymer, after polyethylene and polypropylene.

PVC comes in two basic forms: rigid (sometimes abbreviated as RPVC) and flexible. The rigid form of PVC is used in construction for pipe and in profile applications such as doors and windows. It is also used in making bottles, non-food packaging, and cards (such as bank or membership cards). It can be made softer and more flexible by the addition of plasticizers, the most widely used being phthalates. In this form, it is also used in plumbing, electrical cable insulation, imitation leather, flooring, signage, phonograph records, inflatable products, and many applications where it replaces rubber. With cotton or linen, it is used to make canvas.

## **Manufacturing**

About 80% of production involves suspension polymerization. Emulsion polymerization accounts for about 12%, and bulk polymerization accounts for 8%. Suspension polymerization affords particles with average diameters of 100–180  $\mu\text{m}$ , whereas emulsion polymerization gives much smaller particles of average size around 0.2  $\mu\text{m}$ . VCM and water are introduced into the reactor along with a polymerization initiator and other additives. The contents of the reaction vessel are pressurized and continually mixed to maintain the suspension and ensure a uniform particle size of the PVC resin. The reaction is exothermic and thus requires cooling. As the volume is reduced during the reaction (PVC is denser than VCM), water is continually added to the mixture to maintain the suspension.

## **Applications**

Solid vinyl with a cloth backing is the most common commercial wallcovering and comes from the factory as untrimmed at 54 inches (140 cm) approximately, to be overlapped and double cut by the installer. This same type can be pre-trimmed at the factory to 27 inches (69 cm) approximately.

## **Collection(s)**

Contract Volume I and Contract Volume II