Discoloration of Painted Drywall

There are several known causes of discoloration problems on painted drywall. The causes of yellowing include tannin bleeding from recycled wood by-products used in the facing cardboard, sizing compounds used to treat the facing cardboard and moisture migration through the drywall. Darkening may occur over thicker joint compound areas where the drywall is seamed or where filled nail holes or screw heads are present. This type of darkening could be caused by several mechanisms.

Causes of Yellowing

- **Tannin Staining** - The cardboard facing of some drywall is currently being manufactured with wood pulp and low grades of recycled materials including wood by-products. These by-products may contain a water soluble extractive known as tannin. When waterborne paints are applied to this facing, a yellow or even pink colored discoloration may occur similar to tannin bleeding over certain woods such as redwood and cedar.

- **Sizing Discoloration** - Some manufacturers of drywall have reportedly switched to a new highly alkaline sizing compound on the cardboard facing. This alkaline sizing can react with latex paint, causing a yellow discoloration.

- **Moisture Staining** - High moisture levels either in the drywall prior to painting or in the surrounding ambient conditions during and after painting will cause eventual moisture migration through the drywall to the surface. The moisture will dissolve soluble materials and carry them to the surface causing discoloration, slow drying of the applied paint, and/or blistering and peeling.

Causes of Darkening

- **Joint Staining** - Joint areas may darken due to mildew contamination of the joint compound or from the reaction of certain metals used in preservatives in the compound with hydrogen sulfide gas in the ambient atmosphere.
Nail Head Discoloration - Nail or screw head areas may darken or discolor. This may be due to the same causes as joint staining or to moisture in the wall itself or condensation on the heads. The nail or screw heads may be corroding or rusting simply because they are not made of adequately corrosion-resistant metal. In some cases, the nails or screws may be conducting interior heat away to a colder exterior wall. This causes the areas to become a cold spot and condensation may form, promoting corrosion or simply attracting dust and dirt.

Preventative Measures

Always protect drywall from moisture and contamination prior to installation. Minimize humidity levels during construction and painting, and optimize ventilation. Install adequate ventilation to reduce moisture in areas such as kitchens, bathrooms and laundry rooms. Attic louvers, exhaust fans and dehumidifiers are also helpful and should be used regularly year round.

Painting Recommendations

Test-patch suspect material for potential discoloration prior to general painting. When necessary, use a special stain-blocking primer such as 3210 GRIPPER® Interior/Exterior Primer Sealer on problem drywall or to correct discoloration over previously applied latex paints. Finish as desired.