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Standard Terminology Relating to Reinforced Plastic Pultruded Products[1]

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1. Scope

1.1 These definitions cover terms used in the reinforced plastics pultrusion industry. In some cases the terms may be identical to those employed in other standards or by other standards bodies.

NOTE 1—There is no similar or equivalent ISO standard.

2. Terminology Definitions

black marking—black smudges on the surface of the pultruded product that cannot be removed by cleaning or scrubbing or wiping with solvent.

NOTE 2—Black marking results from excessive pressures in the die when the pultrusion is rubbing against soft or unchromed die surfaces.

blister—a rounded elevation of the pultruded surface with boundaries that may be more or less sharply defined.

NOTE 3—The rounded elevation somewhat resembles in shape a blister on the surface of human skin. Blisters may exist within the pultrusion as a hollow delaminated area (usually gas-filled) under a raised portion of the surface.

blooming, fiber—a pultrusion surface condition exhibiting a fiber prominence or fiber show that usually has a white or bleached color and a sparkling appearance.

NOTE 4—The surface generally feels rough when touched by the fingers and is of superficial thickness easily removed by buffing or light sanding.

blooming, undercure—a dull and bleached surface color that is evident in pultruded material not exposed to the weather.

NOTE 5—This condition is usually the result of insufficient surface cure.

bow—a condition of longitudinal curvature in pultruded parts.

burn—a discoloration, distortion, or destruction of the pultruded surface as a result of thermal decomposition.

chips—minor damage to the pultruded surface that removes material but does not cause a crack or craze.

concave surface—a local concave curvature in the flat surfaces of pultruded plastic parts as measured transversely to their length.

convex surface—a local convex curvature in the flat surfaces of pultruded plastic parts as measured transversely to their length.

crack—a visual separation that occurs internally or penetrates down from the pultruded surface to the equivalent of one full ply or more of reinforcement.

crater—a small, shallow pultrusion surface imperfection.

craze—multiple fine cracks at or under the pultruded surface.

craze, hairline—multiple fine pultrusion surface separation cracks that exceed ¼ in. (6.4 mm) in length and do not penetrate in depth to the equivalent of full ply of reinforcement.

craze, resin—multiple fine separation cracks at the pultruded surface not penetrating into the reinforcement.

NOTE 6—This condition is usually due to resin shrinkage during cure in resin-rich areas.

craze, star—multiple fine pultrusion surface separation cracks exceeding ¼ in. (6.4 mm) in length but not penetrating in depth to the equivalent of a full ply of reinforcement, that appear to emanate from a central point.

NOTE 7—This condition is often caused by impact damage.

delamination—the separation of two or more layers or plies of reinforcing material within a pultrusion.

die-parting line—a lengthwise flash or depression on the surface of a pultruded plastic part.

NOTE 8—The die-parting line is associated with the area where separate pieces of the die join together to form the cavity.

discoloration—a streak or other pattern on the surface that causes a noticeable change of color from the rest of the pultruded surface.

dry fiber—a condition in which fibers are not fully encapsulated by resin during pultrusion.

dullness—a lack of normal pultruded suface gloss or shine.

NOTE 9—This condition can be caused by insufficient cure locally or in large areas, resulting in the dull band created on a pultruded part within the die when the pultrusion process is interrupted briefly (see **stop mark**).

[1] These definitions are under the jurisdiction of ASTM Committee D-20 on Plastics and are the direct responsibility of Subcommittee D20.18 on Reinforced Thermosetting Plastics.

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