

Los Angeles City Fire Department

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POLYCARBONATE WINDOWS

LEXAN is the brand name for a relatively new glazing material that is being installed where windows are subject to attack by vandals, rioters, or burglars. Lexan is a polycarbonate thermoplastic that has outstanding impact strength, heat resistance, dimensional stability, transparency, ease of fabrication, resistance to ultraviolet light, and is self-extinguishing. The High impact strength and springiness of this material make forcible entry difficult or impossible without proper tools and technique.

Lexan is used in temperatures ranging from -60° F to 280° F, and will soften at 350° F. In normal use, Lexan window material has a thickness from 1/8 inch to 1/4 inch. On special installations protecting cashiers, bank tellers and toll collectors the thickness of sheets used may be up to 1 1/4 inch.

At the present time polycarbonate window installations are not approved by the Los Angeles City Building Department. However, some exceptions have been made allowing a few very special and specific installations.

The Los Angeles Unified School District is replacing glass with Lexan in many school buildings. The Recreation and Parks Department also has installed this material in some of their buildings. Thrifty Drug Stores have installed Lexan in a number of their stores in the South Central area of the City.

Polycarbonate windows can be identified several ways. Feeling the window surface with a bare hand reveals a softer surface than glass. Striking the window gently with any hard instrument gives a dull plastic sound different from glass. Lexan surface will scratch very easily as opposed to glass. Large window installations of this material have a wavy surface and some obvious distortion along the sides.

Lexan windows can be cut out easily with the rotary saw by using the carbide-tipped wood cutting blade. In general, the Lexan has to be cut on all sides of the desired opening. It will not "crack out".

Horizontal cuts should be made first. Start all cuts smoothly to avoid bounce and chatter of the saw. Cut as rapidly as possible without bogging down the saw. During the cutting, wear goggles because chips and shards are produced that are thrown out with considerable force. Chain saws are not effective and they shall not be used on this material. Tests have shown that sawing on Lexan will break the teeth of the chain saw blade, also intense vibration of the saw creates an extremely unsafe condition to the operator.

Striking or impact tools, such as hammer, axe, ram bar, etc., are not effective, except where the entire panel can be "punched through" the frame. In many installations the Lexan is bolted or pop-riveted to the frame to prevent "punch through". In a multi-pane window the mullions may be cut allowing the panes to be pushed in.