



## case study



# > ADA Detectable Warning Plates

### Problem

The Americans with Disabilities Act of 1990 is a landmark law that was designed to prohibit – under specified circumstances – discrimination based on disability. The 1990 Act and its companion ADA Amendments Act (ADAAA) of 2008 are wide-ranging laws which, among other provisions, require the use of curb ramps between sidewalks and streets to accommodate the use of wheelchairs and other devices by disabled persons. However, the introduction of curb ramps created an unintended problem for visually impaired persons, as it removed the distinct curb border between sidewalks and streets. This made it difficult – if not impossible – for the visually impaired to determine the end of the sidewalk and the beginning of the street. The solution to this problem was the introduction of “detectable warnings” at all curb ramps. These detectable warning plates use “truncated domes,” which were determined by the ADA Accessibility Guidelines (ADAAG) to be the only allowable tactile warnings, as grooves and other designs are too similar to pavement textures, cracks, and sidewalk joints.

For many years, detectable warning plates were made from concrete, paving bricks, cast iron, or stainless steel. These materials, while meeting ADAAG requirements, had several problems, including:

- Corrosion
- Weight & transportability
- Durability
- Cost

### Solution

A solution to these problems was found in the use of thermoset sheet molding compound (SMC) from IDI Composites International. SMC is a mixture of polymer resin, fiber reinforcements, catalysts, pigments and other ingredients. Because SMC has found wide use in the molding of large parts that need high mechanical strengths, it was considered to be an excellent choice for use in the large (up to 4' x 2') detectable warning plates used in curb ramps, pedestrian crossings, building access ramps, store entrances, transit platforms, bus stops, etc.

IDI's S51 SMC was found to have the right combination of properties for this application. The material combines very high flexural, tensile, and compressive strength with high flexural modulus and hardness, plus very low water absorption and shrinkage. These properties help S51 meet and exceed the requirements of detectable warning plate manufacturers, as well as the specifications laid down by the ADAAG, the Federal Highway Administration, and California's Title 24.

engineered for performance

## Results

The use of IDI's material has allowed detectable warning plate manufacturers to produce extremely durable but lightweight plates. In addition to their durability and lighter weight (compared to concrete, cast iron, and stainless steel), plates made from IDI's SMC materials are:

- **Highly wear resistant** (*important for high-traffic pedestrian areas*)
- **Fire resistant**
- **UV and fade resistant**
- **Salt and chemical resistant**
- **Impervious to water**
- **Available in a wide variety of highly visible colors**
- **Cost effective**



IDI Composites International is proud of the part it plays in helping Americans with disabilities achieve increased access and mobility.

IDI Composites International is the premier global formulator and manufacturer of thermoset molding compounds for custom molders and OEMs. The company provides customized polyester/vinylester-based bulk molding compounds (BMC) and sheet molding compounds (SMC) for the world's most demanding markets, including automotive/truck, electrical, appliance, food service, and energy.

IDI high-performance thermoset molding compounds are lightweight and exceptionally strong, exhibiting better strength-to-weight ratios than most metals. They are also corrosion resistant, creep resistant, and exhibit excellent thermal properties compared to engineered thermoplastic-based products.

Headquartered in a 120,000 square foot manufacturing facility and research center in Noblesville, IN (USA), IDI has a strong presence in the international thermoset composites market. To support a growing worldwide customer base, the company operates multiple wholly-owned manufacturing facilities in Europe, Asia, and The Americas.

[www.idicomposites.com](http://www.idicomposites.com)

**The Americas**

Noblesville, IN  
sales-usa@idicomposites.com

**Europe**

Vineuil, France  
sales-europe@idicomposites.com

**United Kingdom**

Oldbury, UK  
sales-uk@idicomposites.com

**Asia/Pacific**

Shanghai, China  
sales-asia@idicomposites.com

**Caribbean & South America**

Aguirre, Puerto Rico  
sales-caribe@idicomposites.com