参考出品
REFERENCE EXHIBIT

高耐衝撃軽量発泡ドアトリム
Lightweight Molded Foam Door Trims with High Impact-resistance

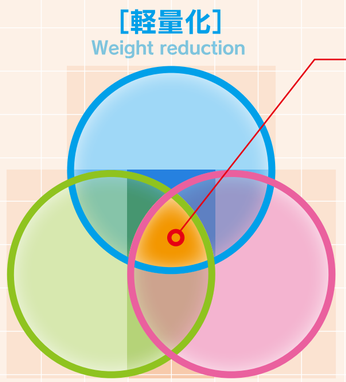
高耐衝撃プラスチックを衝撃改質材として活用することで実現した、
車両側突試験でシャープエッジ破壊*1しにくい世界トップクラスの軽量発泡ドアトリム。
(従来比約30%軽量化)

This world-class lightweight molded foam door trim (30% lighter than conventional materials) uses high impact-resistant plastic as a modifier, inhibiting sharp edge fracturing*1 in vehicle collision tests.

*1 **シャープエッジ破壊**：搭乗者を傷付けてしまう形(鋭角)に材料が破壊される状態
Scattered a sharp angle in such a way as to harm passengers

特長 FEATURE

【設計コンセプト】 Design concept



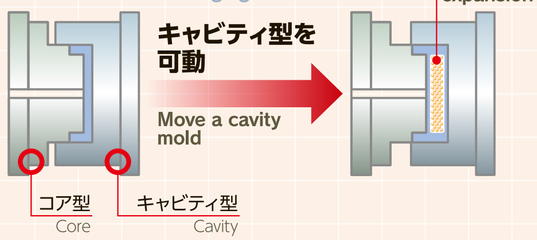
高耐衝撃軽量発泡ドアトリムの目指す姿
Approach to impact-resistant lightweight molded foam door trim

【課題】Problem 高倍率発泡での耐衝撃性低下
Reduction in impact resistance with high-expansion foam

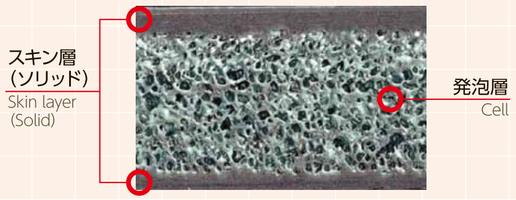
当社開発の高耐衝撃プラスチックを衝撃改質材として活用することで割れを抑制
Use of our original high impact-resistant plastic as an impact modifier inhibits splitting and cracking

【発泡成形プロセス】 Foam Molding Process

▶樹脂に化学発泡剤を添加し射出成形
Injection molding of the matrix resin with a chemical forming agent



▶発泡後の基材断面
Cross-section of material after expansion

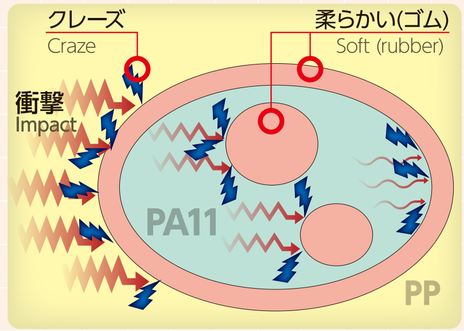


【割れ抑制メカニズム】 Mechanism in suppressing splitting

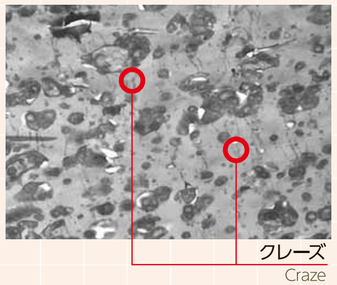
衝撃時にサラミ構造中の柔らかいゴムが、効率的にクレーズ*2を発生させることでエネルギーを分散し、衝撃を吸収。

During an impact, the soft rubber within the salami structure efficiently generates crazing*2, dispersing and absorbing the energy of the impact.

▶衝撃吸収のイメージ
Illustration of impact absorption



▶車両側突試験後の透過型電子顕微鏡画像
Transmission electron microscope image of material after vehicle collision test



*2 **クレーズ**：衝撃入力時に発生する微小なひび割れ
Generation of microscopic cracks when energy is input in an impact.