

Development of rPU Mattress using Chemically Recycled Polyol based on PU Scrap.

- 01. Overseas Trends
- 02. Domestic Trends
- 03. Recycled PU based on Repolyol
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01. Overseas Trends



Valumat

Coalition Agency for Responsibility of Belgian Mattress
Producers: Mattress circulation

Waste hierarchy



European Commission

Waste Framework Directive PU 55% Recycling (2025)

02. Domestic trend



Ministry of Environment

Plan to increase the proportion of waste plastic pyrolysis treatment
0.1% (Current)→10% ('2030)



Petrochemical Company

Lotte Group (waste PET, 110,000 tons recycled by '24)
LG Chem (recycling plastic cosmetic containers)

※ The contents mainly consist of thermoplastic plastics.
No mention of thermosetting recycling

03. Recycled PU based on Repolyol

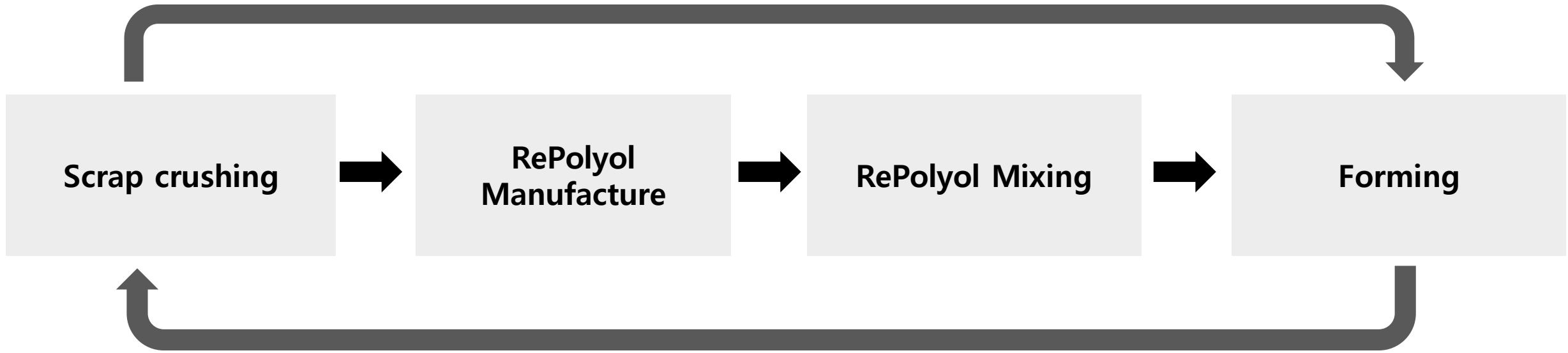


Fig1. Scrap crushing



Fig2. RePolyol Manufacture



Fig3. RePolyol Mixing



Fig4. Forming

04. Key Point



1. Contribution of resource circulation

- Out of 250 tons of waste foam generated per year, 52 tons are recycled (about 21%)
- Reduction of disposal cost: 70 million won/year

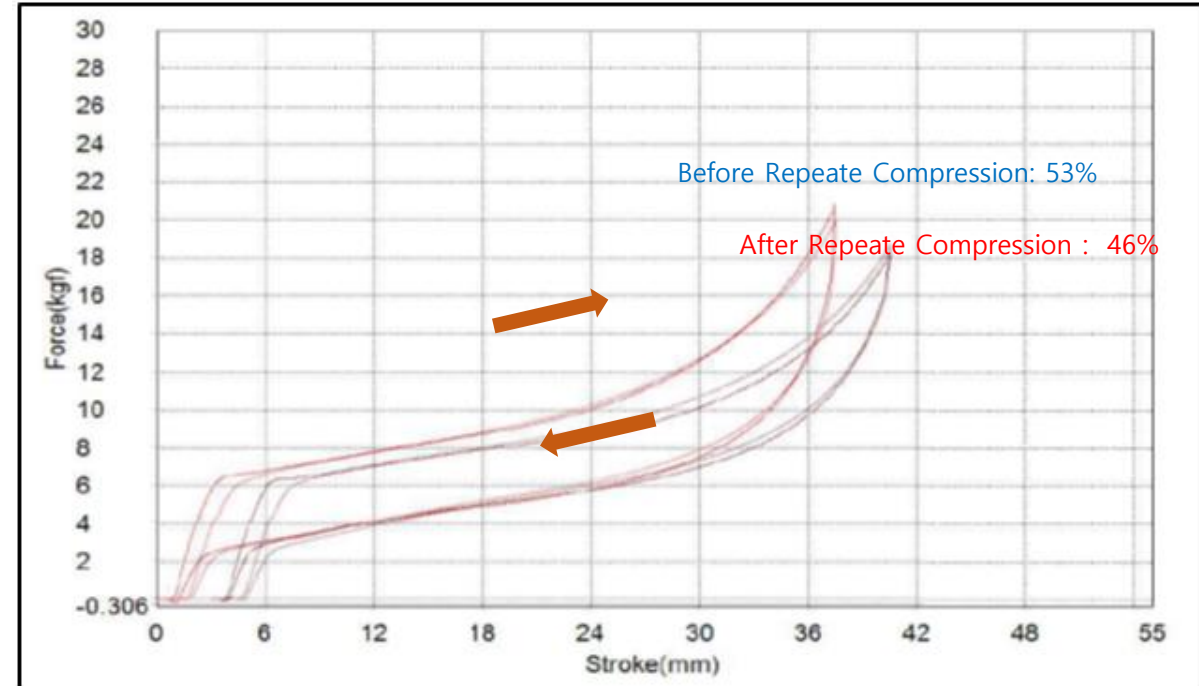
2. maintenance of manufacturing cost

04. Key Point



3. Improving

- Improved comfort (10%)
- Improved durability (5%)
- Improved tensile tear strength (20%)



<Hysteresis Loss Graph>

05. Certification

RCS Certification

- CN : CU1138384RCS-2022-00008918
- 5.0% Recycled PRE-CONSUMER POLYURETHANE RECYCLEDCLAIM.ORG



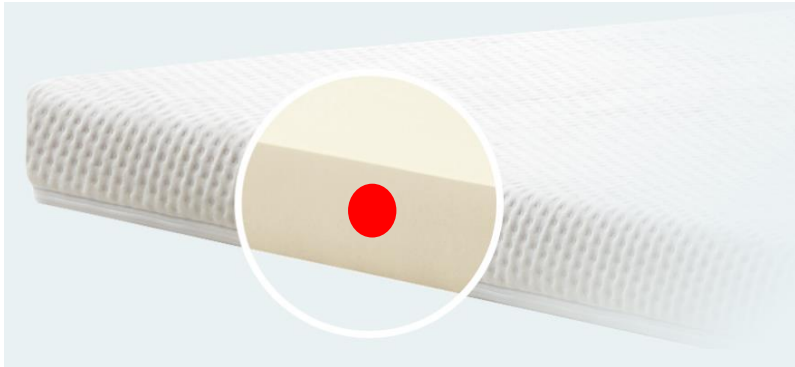
Recycled Claim Standard

Certification Principles

- Traceability
- Mass balance
- Separation and Identification

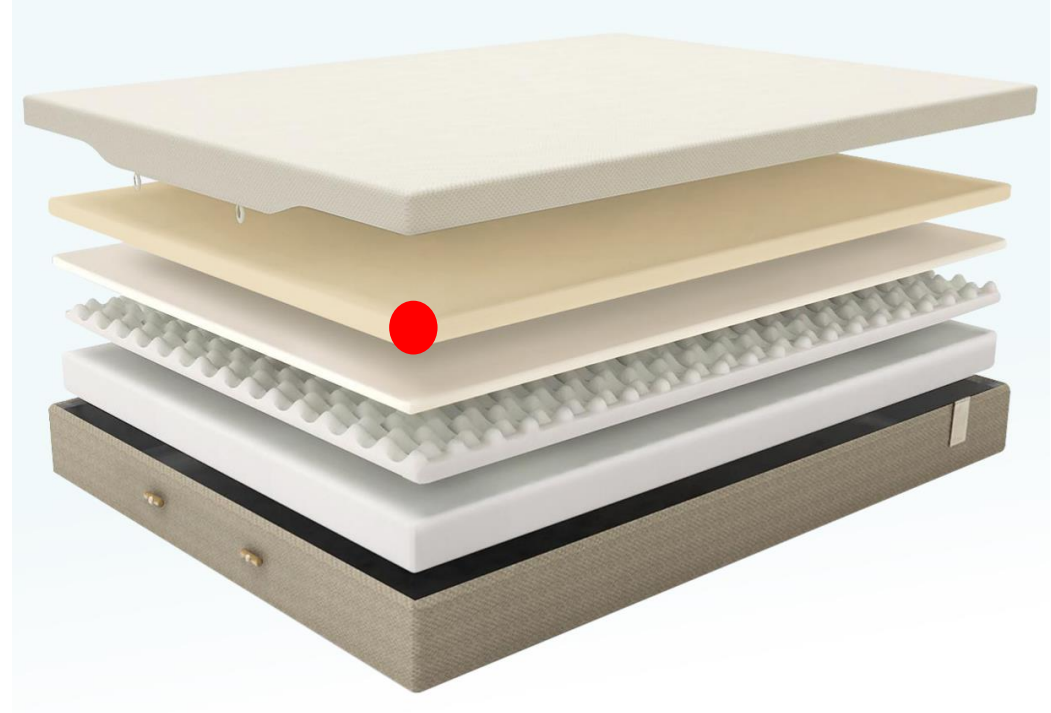
06. Product

Recotec Foam



Topper

- Recotec Foam : 65mm



Mattress

- Recotec Foam : 50mm

07. Future Plan



The circulation environment of the Mattress

THANKS