


# オール樹脂シール材 All plastic seal



写真は製品取り付け後3年経過したもので、取り付け後も良好な性能を維持しています  
A photograph is the product which have passed three years since it is installed. It is still keeping good performance



# 特徴 Feature

- ・大幅軽量化の達成 (Co2大幅削減)  
The achievement of lightweight (Reduction of CO2)
- ・リサイクルが100%可能  
Recycling is possible 100%
- ・シール性能はEPDMと同等  
The seal performance is equivalent to EPDM
- ・ドアシール: ジョイントなしでコーナー追従はR30に対応  
Door Seal: Installation is possible to the R30 corner without injection
- ・バックドアシール、トランクシール、スライドドアシール: ブチルゴム不使用  
Back door seal, Trunk seal, Slide door seal: An isobutylene-isoprene rubber disuse
- ・金属を使わないので錆が発生しない。  
There is not rust, because it is metal nonuse
- ・製造時の消費電力の削減 (EPDMの製造にくらべ約50%の削減)  
Reduction of the consumption electricity at the production (It is reduced about 50% in comparison with the production of EPDM)

# 大幅軽量化の達成 (Co2大幅削減) 平均44%削減達成

The achievement of lightweight (Reduction of CO2)

Achievement of average 44% reduction

製品重量比較(実測値) Product weight comparison (actual measurement)

## 【TPO】

Back Door Seal: **730g/4190mm** **174.2g/1000mm**

(日本車ハッチバックモデルを参考に作成した断面 / The cross section that is refer to Japanese maker's hatchback model)

Door Seal: **250g/1320mm** **189.4g/1000mm**

(日本車ミドルクラスモデルを参考に作成した断面 / The cross section that is refer to Japanese maker's middle class model)

## 【EPDM】

### Japanese car A

Back Door Seal: **1000g/3200mm** **312.5g/1000mm**

(TPO比79.4%増 / 79.4% Increase compared with TPO)

Door Seal: **890g/3330mm** **267.3g/1000mm**

(TPO比41.1%増 / 41.1% Increase compared with TPO)

### Japanese car B

Back Door Seal : **810g/2970mm** **272.7g/1000mm**

(TPO比56.5%増 / 56.5% Increase compared with TPO)

Door Seal: **1060g/3425mm** **309.5g/1000mm**

(TPO比63.4%増 / 63.4% Increase compared with TPO)

### Japanese car C

Back Door Seal : **770g/3500mm** **220g/1000mm**

(TPO比26.3%増 / 26.3% Increase compared with TPO)

Door Seal: **590g/2175mm** **271.3g/1000mm**

(TPO比43.2%増 / 43.2% Increase compared with TPO)



# リサイクルが100%可能 Recycling is possible 100%

## 【実施例/Example】

粉碎された製品 / crushed product

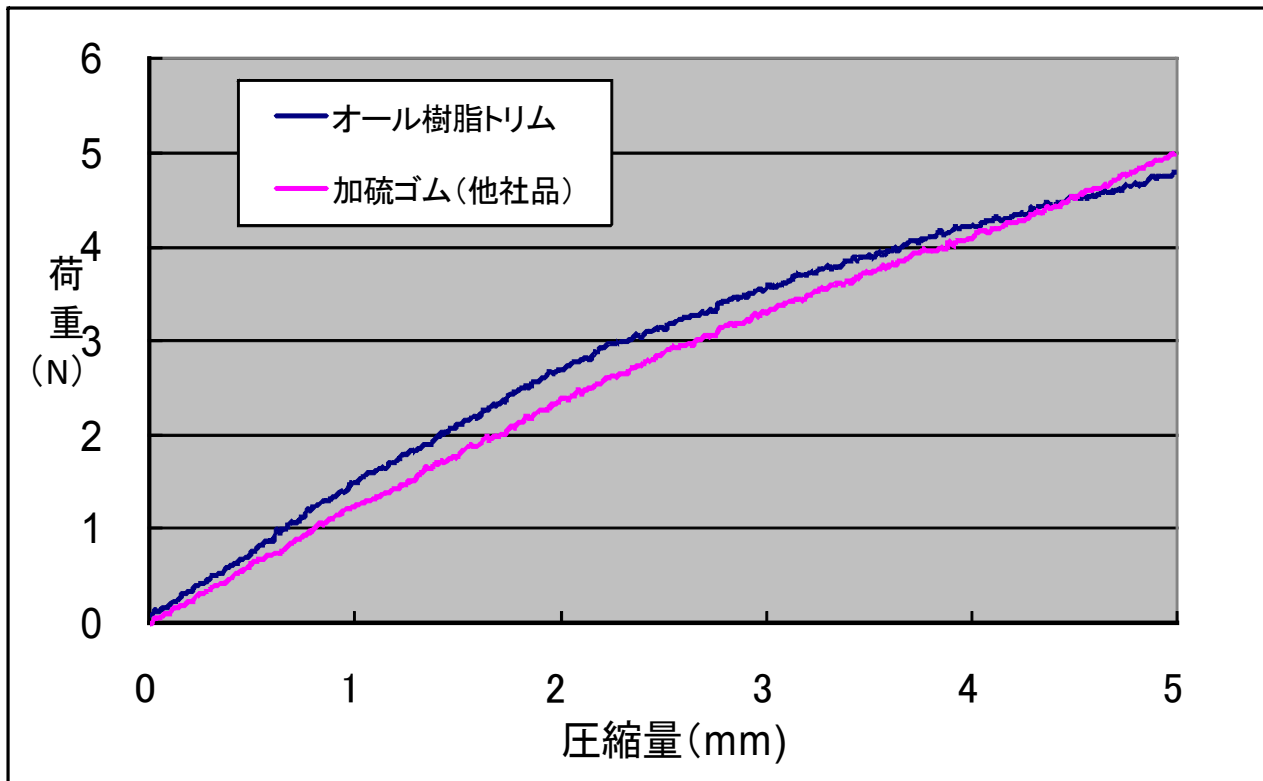


粉碎品で作られたフロアマット/ The floor mat made of crushed product



# シール性能はEPDMと同等 The seal performance is equivalent to EPDM

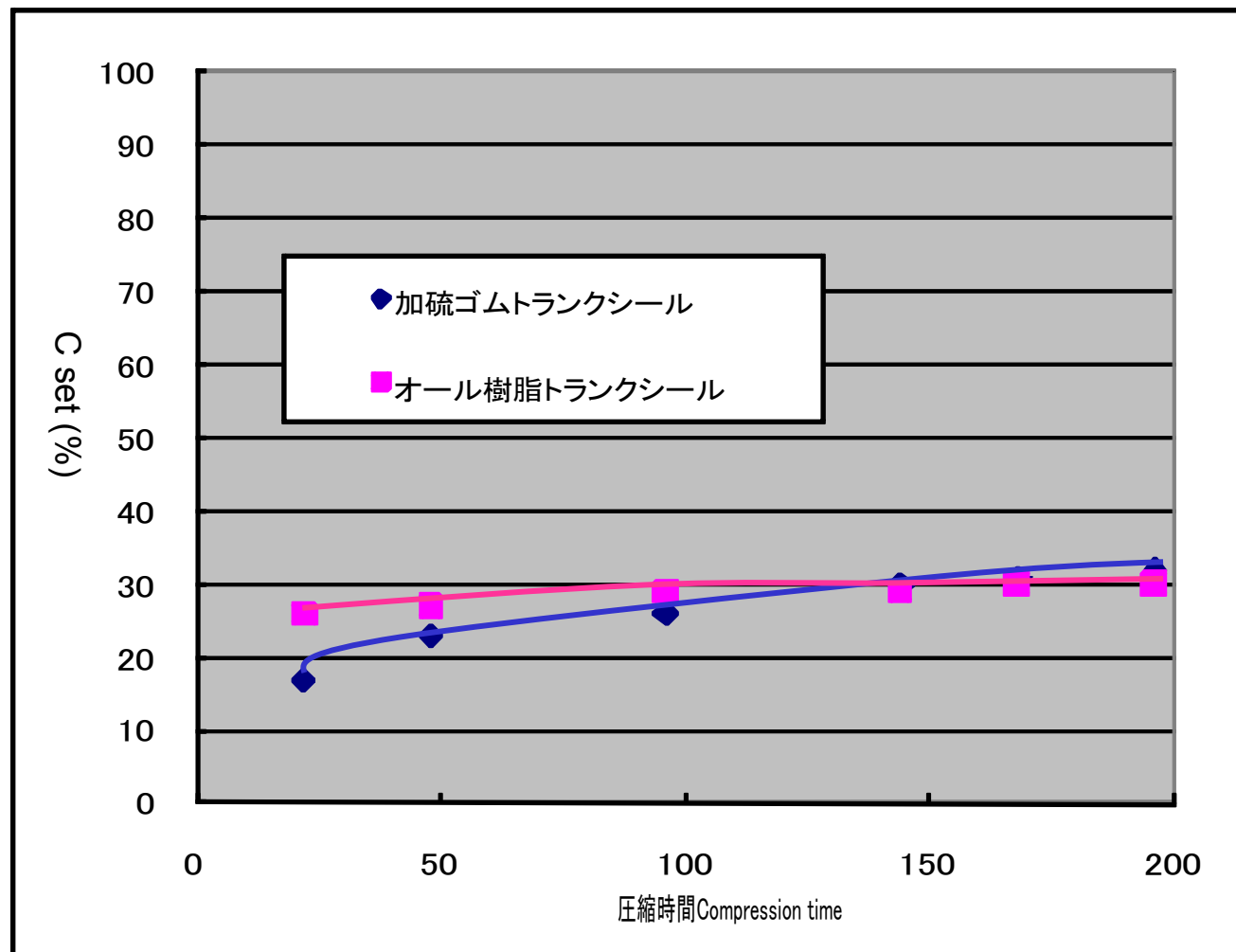
ドアシール部品圧縮荷重特性/A door seal part compression load characteristic



圧縮荷重試験ジグ  
Compression Test Jig

オール樹脂トリム、加硫ゴムトリムの圧縮荷重曲線  
TPO seal, EPDM seal the compression load curve

## オール樹脂トランクシール部品の圧縮永久歪み



シール部品の圧縮永久歪み (70°C)  
Compression set of the seal part (70°C)A

部品100mm長を用いて試験、圧縮量は6mm  
100mm length; quantity of compression, is 6mm

# 組み付け性能はEPDMと同等 The installation performance is equivalent to EPDM

## テスト方法と結果 Test method and result

### テスト方法 Test method

引抜き力 Leaving force test

板厚 Metal board thickness 3.0mm

速度 Speed 50mm/min

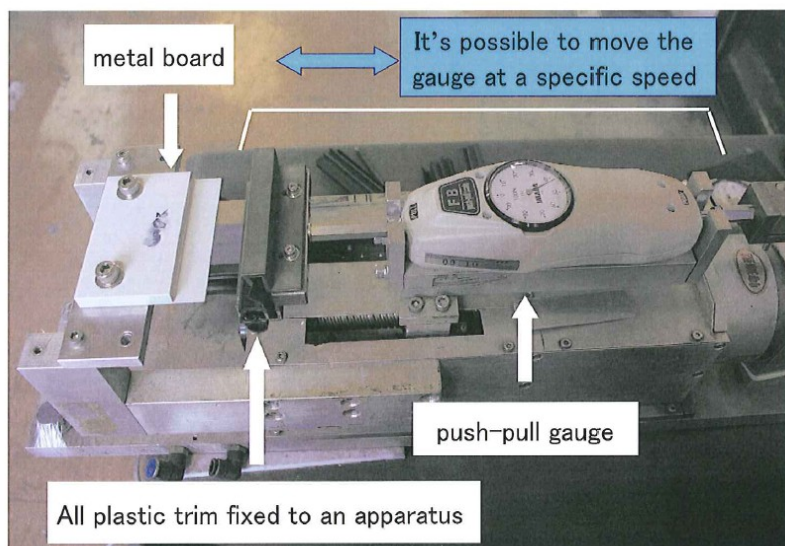
温度 Temperature 20°C

### ‘Inserting Force’ and ‘Leaving Force’

We measured “Inserting Force” and “Leaving Force” of the trim, using push-pull gauge as shown below.

Inserting Force: Force that a trim took to hold together with the metal board.

Leaving Force: Force that a trim took for it to get separated from the metal board.



### 引抜き力結果 Leaving force test Result

EPDM 米国製 made in U.S.A.	45N
EPDM 欧州製 Made in Europe	34.7N
EPDM 日本製 Made in Japan	33N
TPO熱老化前 Before heat aging	47.7N
TPO熱老化後 After heat aging	60N

aging condition : 80°C×40h



# 組み付け性能はEPDMと同等

## The installation performance is equivalent to EPDM

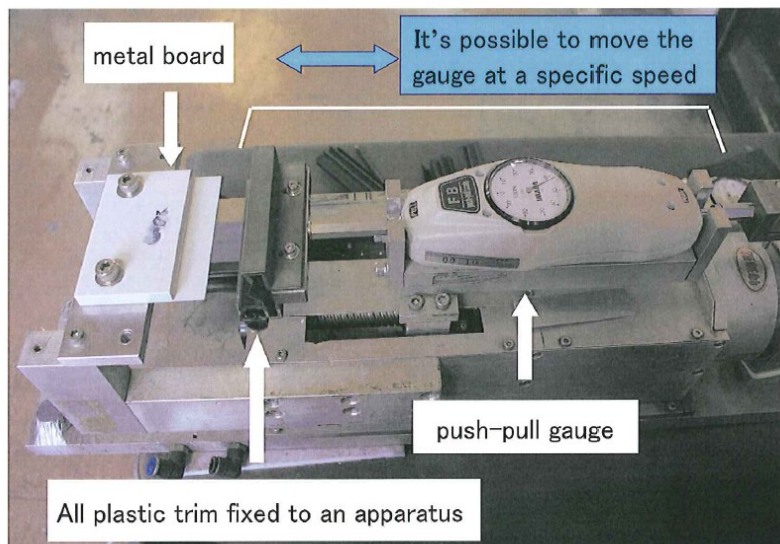
### テスト方法と結果 Test method and result

#### ‘Inserting Force’ and ‘Leaving Force’

We measured “Inserting Force” and “Leaving Force” of the trim, using push-pull gauge as shown below.

Inserting Force: Force that a trim took to hold together with the metal board.

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#### テスト方法 Test method

挿入力 Inserting force test

板厚 Metal board thickness 3.5mm

速度 Speed 50mm/min

温度 Temperature 20°C

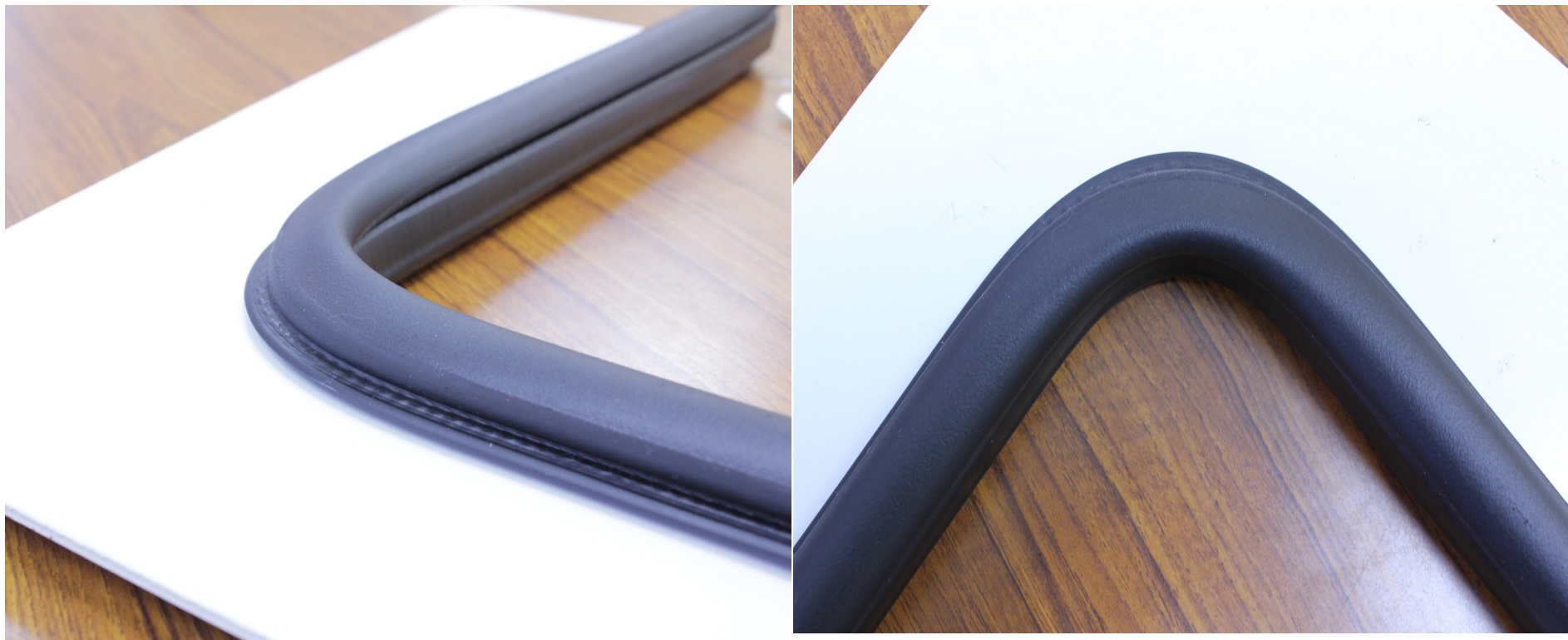
#### 挿入力結果 Inserting force test Result

EPDM 米国製 made in U.S.A.	14N
EPDM 欧州製 Made in Europe	22.3N
EPDM 日本製 Made in Japan	14.3N
TPO熱老化前 Before heat aging	27.3N



ドアシール:ジョイントなしでコーナー追従はR30に対応  
Door Seal: Installation is possible to the R30 corner with Jointless

熱老化80°C×40時間後 After heat aging 80°C×40h



# バックドアシール、トランクシール、スライドドアシール: ブチルゴム不使用 Back door seal, Trunk seal, Slide door seal: An isobutylene-isoprene rubber disuse

Step up and down 2mm mounting flange

フランジの上下段差2mmの  
取り付け状態

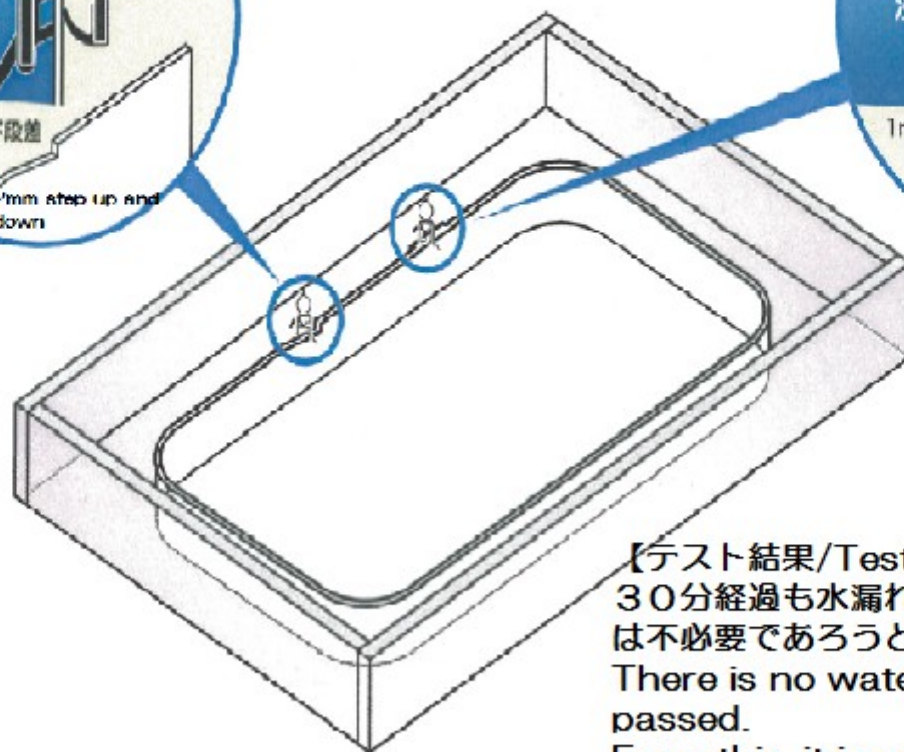


mounting flange width 1mm~3.2mm change

フランジ幅が1mm~3.2mm変化の  
取り付け状態



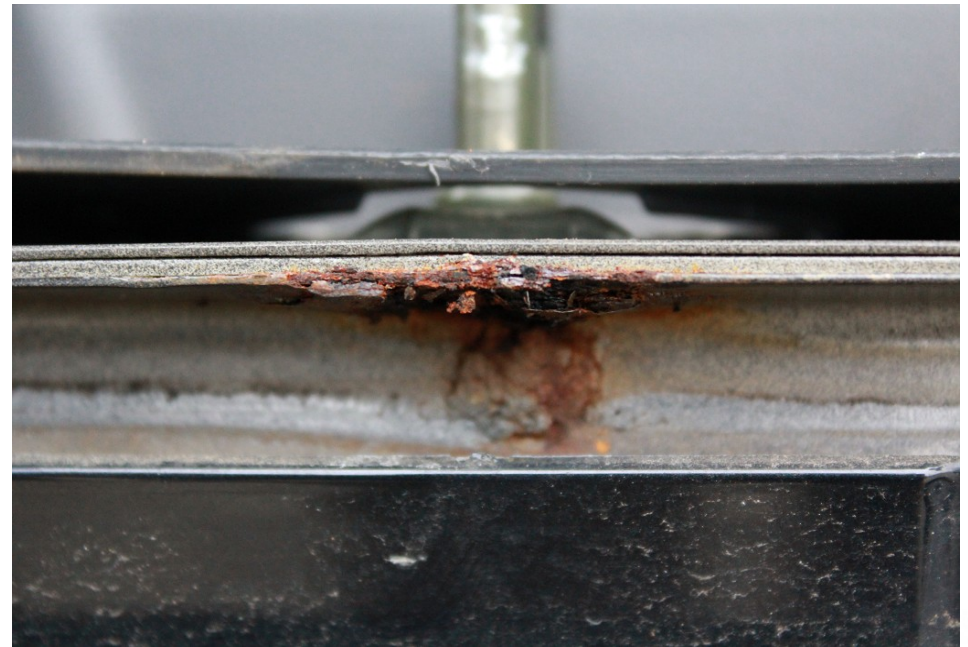
Super soft TPO  
Su 超軟質材



【テスト結果/Test result】  
30分経過も水漏れなし。このことからブチルゴム  
は不必要であろうと想定される。  
There is no water leak 30 minutes have  
passed.  
From this, it is assumed that the  
isobutylene-isoprene rubber is  
unnecessary


金属を使わないので錆が発生しない。  
There is not rust, because it is metal nonuse

【従来の一般的なEPDMシール A conventional general EPDM seal】



オール樹脂シールは金属を使わないので錆が発生しません。  
There is not rust with plastic seals, because it is metal nonuse





製造時の消費電力の削減

Reduction of the consumption electricity at the production

製造時の消費電力の削減  
(EPDMの製造にくらべ約50%の削減)

Reduction of the consumption electricity at  
the production (It is reduced about 50% in  
comparison with the production of EPDM)





## 評価結果

An evaluation result

オール樹脂シールは大手シール材メーカーの各項目のテスト評価で、ロードノイズを含めすべての面でEPDMと同等と評価される。

Plastic seal was evaluated as equal performance with EPDM by the major seal maker, The test method is the various items including a road noise test