

**Uni-Seals Product Catalog**  
**Category: Rubber Coated Steel Sheet**



**UNI-SEALS**

**Unimax Seals Company Limited**  
**[www.uniseals.com](http://www.uniseals.com)**

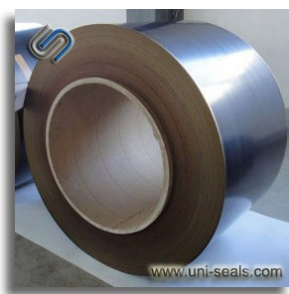
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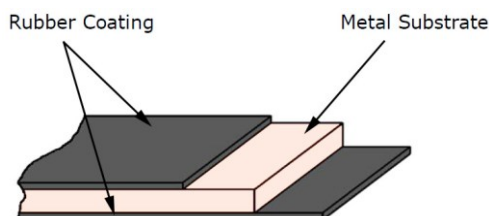
### RCM Sheets for Anti-Squeal Shims

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**Rubber Coated Metal Coil Sheet****Rubber coated metal coil sheet**

Rubber coated metal sheet (RCM sheet) is made from metal substrate coated with thin NBR rubber or other rubber layers through advanced processing technology.

A continuous length RCM coil sheet is made from an entire coil of metal sheet through a series of treatments and rubber coating process automatically and continuously in our special production line.

**Properties & Applications:**

The RCM sheet has good sealing performance, good anti-squeal performance, excellent chemical resistance and anti-aging properties, and good machinability.

It is widely used as gasket material for engines, compressors, refrigerating machines, and as anti-squeal shim material for braking system.

**Product Identification Guide:**

**Style number example: NCN3020**

| N                   | C                   | N                   | 30                | 20              |
|---------------------|---------------------|---------------------|-------------------|-----------------|
| Rubber coating      | Metal substrate     | Rubber coating      | Overall thickness | Metal thickness |
| N = NBR rubber      | C = Carbon steel    | N = NBR rubber      | 30 = 0.30mm       | 20 = 0.20mm     |
| F = FKM rubber      | S = Stainless steel | F = FKM rubber      |                   |                 |
| Q = Silicone rubber | A = Aluminum        | Q = Silicone rubber |                   |                 |
| A = Acrylic rubber  |                     | A = Acrylic rubber  |                   |                 |

**Normal Dimensions:**

Metal substrate thickness: 0.2~0.4mm.

Rubber coating thickness: 0.02~0.08mm.

Maximum width: 800mm/600mm.

Length: 300~500 meters per roll.

## RCM Sheets for Sealing Gaskets

RCM sheet has excellent heat resistance, oil resistance and antifreeze resistance property. It can ensure good sealing performance even under harsh working environment in the engine. Therefore, RCM sheet is often selected as oil or water sealing gasket material for engines.

Our various styles of double-sided and single-sided rubber coated metal sheets can meet different application requirements from various customers.

## Typical Styles:

| Style   | Overall thickness | Metal substrate |           | Rubber coating |                  |
|---------|-------------------|-----------------|-----------|----------------|------------------|
|         |                   | Material        | Thickness | Material       | Thickness        |
| NCN3025 | 0.30mm            | SPCC            | 0.25mm    | NBR            | 0.025mm per side |
| NCN3825 | 0.38mm            | SPCC            | 0.25mm    | NBR            | 0.065mm per side |
| NSN2520 | 0.25mm            | SUS301          | 0.20mm    | NBR            | 0.025mm per side |
| NSN3025 | 0.30mm            | SUS301          | 0.25mm    | NBR            | 0.025mm per side |
| NSN3825 | 0.38mm            | SUS301          | 0.25mm    | NBR            | 0.065mm per side |
| FSF2520 | 0.25mm            | SUS301          | 0.20mm    | FKM            | 0.025mm per side |
| FSF3025 | 0.30mm            | SUS301          | 0.25mm    | FKM            | 0.025mm per side |

Other materials and thicknesses are also available on request.

## RCM sheet NCN3025

Metal substrate (SPCC) thickness: 0.25mm.

NBR rubber coating thickness (each side): 0.025mm.

Overall thickness: 0.30±0.04mm.

Maximum width: 800mm (net width: approx. 785mm).

## RCM sheet NCN3825

Metal substrate (SPCC) thickness: 0.25mm.

NBR rubber coating thickness (each side): 0.065mm.

Overall thickness: 0.38±0.04mm.

Maximum width: 800mm (net width: approx. 785mm).

## Specifications:

| Item                                                       | Testing condition        | Result                                       |
|------------------------------------------------------------|--------------------------|----------------------------------------------|
| Appearance                                                 | Visual inspection        | Smooth surface, no impurities, no blistering |
| Pencil hardness                                            | Pencil hardness tester   | H~3H                                         |
| Coating adhesion                                           | Adhesion test by scratch | Above grade 2                                |
| Heat resistance                                            | 150°C, 24h               | No shedding, no blistering                   |
| Anti Fluid properties:                                     |                          |                                              |
| In #903 oil                                                | 150°C, 5h                | Weight change ≤3%<br>Thickness change ≤12%   |
| In H <sub>2</sub> O:(CH <sub>2</sub> OH) <sub>2</sub> =1:1 | 100°C, 72h               |                                              |
| In R134a                                                   | RT                       |                                              |
| In R134a+#68 oil                                           | RT                       |                                              |
| In ASTM fuel B                                             | RT, 22h                  |                                              |
| Mechanical properties:                                     |                          |                                              |
| Compressibility                                            | ASTM F-36                | ≤5%                                          |
| Recovery                                                   | ASTM F-36                | ≥50%                                         |
| Creep relaxation                                           | ASTM F-38, 100°C, 22h    | ≤10%                                         |

**RCM sheet NSN2520**

Metal substrate (SS301) thickness: 0.20mm.

NBR rubber coating thickness (each side): 0.025mm.

Overall thickness: 0.25±0.04mm.

Maximum width: 600mm (net width: approx. 590mm).

**RCM sheet NSN3025**

Metal substrate (SS301) thickness: 0.25mm.

NBR rubber coating thickness (each side): 0.025mm.

Overall thickness: 0.30±0.04mm.

Maximum width: 600mm (net width: approx. 590mm).

**RCM sheet NSN3825**

Metal substrate (SS301) thickness: 0.25mm.

NBR rubber coating thickness (each side): 0.065mm.

Overall thickness: 0.38±0.04mm.

Maximum width: 600mm (net width: approx. 590mm).

**Specifications:**

| Item                                                       | Testing condition        | Result                                       |
|------------------------------------------------------------|--------------------------|----------------------------------------------|
| Appearance                                                 | Visual inspection        | Smooth surface, no impurities, no blistering |
| Pencil hardness                                            | Pencil hardness tester   | H~3H                                         |
| Coating adhesion                                           | Adhesion test by scratch | Above grade 2                                |
| Heat resistance                                            | 150°C, 24h               | No shedding, no blistering                   |
| Anti Fluid properties:                                     |                          |                                              |
| In #903 oil                                                | 150°C, 5h                | Weight change ≤3%<br>Thickness change ≤12%   |
| In H <sub>2</sub> O:(CH <sub>2</sub> OH) <sub>2</sub> =1:1 | 100°C, 72h               |                                              |
| In R134a                                                   | RT                       |                                              |
| In R134a+#68 oil                                           | RT                       |                                              |
| In ASTM fuel B                                             | RT, 22h                  |                                              |
| Mechanical properties:                                     |                          |                                              |
| Compressibility                                            | ASTM F-36                | ≤5%                                          |
| Recovery                                                   | ASTM F-36                | ≥50%                                         |
| Creep relaxation                                           | ASTM F-38, 100°C, 22h    | ≤10%                                         |

**RCM sheet FSF2520**

Metal substrate (SS301) thickness: 0.20mm.

FKM rubber coating thickness (each side): 0.025mm.

Overall thickness: 0.25±0.04mm.

Maximum width: 600mm (net width: approx. 590mm).

**RCM sheet FSF3025**

Metal substrate (SS301) thickness: 0.25mm.

FKM rubber coating thickness (each side): 0.025mm.

Overall thickness: 0.30±0.04mm.

Maximum width: 600mm (net width: approx. 590mm).

**Specifications:**

| Item                                                       | Testing condition        | Result                                       |
|------------------------------------------------------------|--------------------------|----------------------------------------------|
| Appearance                                                 | Visual inspection        | Smooth surface, no impurities, no blistering |
| Pencil hardness                                            | Pencil hardness tester   | H~2H                                         |
| Coating adhesion                                           | Adhesion test by scratch | Above grade 2                                |
| Heat resistance                                            | 200°C, 24h               | No shedding, no blistering                   |
| Anti Fluid properties:                                     |                          |                                              |
| In #903 oil                                                | 150°C, 5h                | Weight change ≤3%<br>Thickness change ≤12%   |
| In H <sub>2</sub> O:(CH <sub>2</sub> OH) <sub>2</sub> =1:1 | 120°C, 72h               |                                              |
| In R134a                                                   | RT                       |                                              |
| In R134a+#68 oil                                           | RT                       |                                              |
| In ASTM fuel B                                             | RT, 5h                   |                                              |
| Mechanical properties:                                     |                          |                                              |
| Compressibility                                            | ASTM F-36                | ≤5%                                          |
| Recovery                                                   | ASTM F-36                | ≥50%                                         |
| Creep relaxation                                           | ASTM F-38, 100°C, 22h    | ≤10%                                         |

## RCM Sheets for Anti-Squeal Shims

RCM sheet is a good anti-squeal shim material for braking system. After machined and punched to desired shapes, the anti-squeal shims can be affixed to the steel backing plate directly.

Our various styles of double-sided and single-sided rubber coated metal sheets can meet different application requirements from various customers.

A typical sheet type for this application is one side coated with rubber, and the other side coated with antirust layer and then attached with a pressure-sensitive adhesive layer.

## Typical Styles:

| Style           | Overall thickness   | Metal substrate |           | Rubber coating |                 |
|-----------------|---------------------|-----------------|-----------|----------------|-----------------|
|                 |                     | Material        | Thickness | Material       | Thickness       |
| <b>NCN4640</b>  | 0.46mm              | SPCC-1          | 0.40mm    | NBR            | 0.03mm per side |
| <b>NC4640</b>   | 0.46mm              | SPCC-1          | 0.40mm    | NBR            | 0.06mm one side |
| <b>NCN4640A</b> | 0.46mm<br>+Adhesive | SPCC-1          | 0.40mm    | NBR            | 0.03mm per side |
| <b>NC4640A</b>  | 0.46mm<br>+Adhesive | SPCC-1          | 0.40mm    | NBR            | 0.06mm one side |
| <b>NCN5240</b>  | 0.52mm              | SPCC-1          | 0.40mm    | NBR            | 0.06mm per side |
| <b>NCN5240A</b> | 0.52mm<br>+Adhesive | SPCC-1          | 0.40mm    | NBR            | 0.06mm per side |

Other materials and thicknesses are also available on request.

## RCM sheet NCN4640

Metal substrate (SPCC-1) thickness: 0.40mm.

NBR rubber coating thickness (each side): 0.03mm.

Overall thickness: 0.46±0.04mm.

Maximum width: 800mm (net width: approx. 785mm).

## Specifications:

| Item                            | Testing condition                              | Result                                       |
|---------------------------------|------------------------------------------------|----------------------------------------------|
| <b>Metal substrate</b>          | Vickers hardness tester                        | ≥200HV                                       |
| <b>Appearance</b>               | Visual inspection                              | Smooth surface, no impurities, no blistering |
| <b>Pencil hardness</b>          | Pencil hardness tester                         | Above 2H                                     |
| <b>Coating adhesion</b>         | Adhesion test by scratch                       | Above grade 2                                |
| <b>Peel strength</b>            | Peel force tester                              | >4.9Mpa                                      |
| <b>Impact test</b>              | 205°C, 60s                                     | No cracking, no shedding                     |
| <b>Bending test</b>             | Scratching 180-degree arc surface with a knife | No cracking                                  |
| <b>High temperature test</b>    | 300°C, 20min                                   | No cracking                                  |
| <b>Resistance to salt spray</b> | 240h                                           | No bubbles, no shedding                      |
| <b>Resistance to #901 oil</b>   | 150°C, 5h                                      | Weight increase ≤2%                          |
|                                 |                                                | Thickness increase ≤2%                       |

**RCM sheet NCN5240**

Metal substrate (SPCC-1) thickness: 0.40mm.

NBR rubber coating thickness (each side): 0.06mm.

Overall thickness:  $0.52 \pm 0.04$ mm.

Maximum width: 800mm (net width: approx. 785mm).

**RCM sheet NCN5240A**

Metal substrate (SPCC-1) thickness: 0.40mm.

NBR rubber coating thickness (each side): 0.06mm.

Adhesive layer thickness: approx. 0.14mm.

Overall thickness excluding adhesive layer:  $0.52 \pm 0.04$ mm.

Overall thickness including adhesive layer: approx. 0.66mm.

Maximum width: 800mm (net width: approx. 785mm).

**Specifications:**

| Item                            | Testing condition                              | Result                                       |
|---------------------------------|------------------------------------------------|----------------------------------------------|
| <b>Metal substrate</b>          | Vickers hardness tester                        | $\geq 200$ HV                                |
| <b>Appearance</b>               | Visual inspection                              | Smooth surface, no impurities, no blistering |
| <b>Pencil hardness</b>          | Pencil hardness tester                         | Above 2H                                     |
| <b>Coating adhesion</b>         | Adhesion test by scratch                       | Above grade 2                                |
| <b>Peel strength</b>            | Peel force tester                              | $> 4.9$ Mpa                                  |
| <b>Impact test</b>              | 205°C, 60s                                     | No cracking, no shedding                     |
| <b>Bending test</b>             | Scratching 180-degree arc surface with a knife | No cracking                                  |
| <b>High temperature test</b>    | 300°C, 20min                                   | No cracking                                  |
| <b>Resistance to salt spray</b> | 240h                                           | No bubbles, no shedding                      |
| <b>Resistance to #901 oil</b>   | 150°C, 5h                                      | Weight increase $\leq 2\%$                   |
|                                 |                                                | Thickness increase $\leq 2\%$                |

**Note:**

1. All technical details quoted throughout this catalogue are based on our extensive tests and years of experience, however, they can only serve as guide values. Your specific application should not be undertaken without independent study and evaluation for suitability. Failure to select proper products and specifications could result in property damage and/or personal injury.
2. Technical details subject to change without notice. This edition cancels all previous issues.

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