

Material Contact Properties Table

The table below shows material types and their commonly used values for the dynamic coefficient of friction and restitution.

[References](#)

[Learn more about contacts.](#)

| Material 1: | Material 2: | Mu static: | Mu dynamic: | Restitution coefficient: |
|------------------|------------------|------------|-------------|--------------------------|
| Dry steel | Dry steel | 0.70 | 0.57 | 0.80 |
| Greasy steel | Dry steel | 0.23 | 0.16 | 0.90 |
| Greasy steel | Greasy steel | 0.23 | 0.16 | 0.90 |
| Dry aluminium | Dry steel | 0.70 | 0.50 | 0.85 |
| Dry aluminium | Greasy steel | 0.23 | 0.16 | 0.85 |
| Dry aluminium | Dry aluminium | 0.70 | 0.50 | 0.85 |
| Greasy aluminium | Dry steel | 0.30 | 0.20 | 0.85 |
| Greasy aluminium | Greasy steel | 0.23 | 0.16 | 0.85 |
| Greasy aluminium | Dry aluminium | 0.30 | 0.20 | 0.85 |
| Greasy aluminium | Greasy aluminium | 0.30 | 0.20 | 0.85 |
| Acrylic | Dry steel | 0.20 | 0.15 | 0.70 |
| Acrylic | Greasy steel | 0.20 | 0.15 | 0.70 |
| Acrylic | Dry aluminium | 0.20 | 0.15 | 0.70 |
| Acrylic | Greasy aluminium | 0.20 | 0.15 | 0.70 |
| Acrylic | Acrylic | 0.20 | 0.15 | 0.70 |
| Nylon | Dry steel | 0.10 | 0.06 | 0.70 |
| Nylon | Greasy steel | 0.10 | 0.06 | 0.70 |
| Nylon | Dry aluminium | 0.10 | 0.06 | 0.70 |
| Nylon | Greasy aluminium | 0.10 | 0.06 | 0.70 |
| Nylon | Acrylic | 0.10 | 0.06 | 0.65 |
| Nylon | Nylon | 0.10 | 0.06 | 0.70 |

| | | | | |
|---------------|------------------|------|------|------|
| Dry rubber | Dry Steel | 0.80 | 0.76 | 0.95 |
| Dry rubber | Greasy steel | 0.80 | 0.76 | 0.95 |
| Dry rubber | Dry aluminium | 0.80 | 0.76 | 0.95 |
| Dry rubber | Greasy aluminium | 0.80 | 0.76 | 0.95 |
| Dry rubber | Acrylic | 0.80 | 0.76 | 0.95 |
| Dry rubber | Nylon | 0.80 | 0.76 | 0.95 |
| Dry rubber | Dry rubber | 0.80 | 0.76 | 0.95 |
| Greasy rubber | Dry steel | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Greasy steel | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Dry aluminium | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Greasy aluminium | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Acrylic | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Nylon | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Dry rubber | 0.63 | 0.56 | 0.95 |
| Greasy rubber | Greasy rubber | 0.63 | 0.56 | 0.95 |

References

The friction values used in the material interaction table are generalized values based on the following references:

- Bowden & Tabor, "The Friction and Lubrication of Solids," Oxford.
- Fuller, "Theory and Practice of Lubrication for Engineers," Wiley.
- Ham & Crane, "Mechanics of Machinery," McGraw-Hill.
- Bevan, "Theory of Machines," Longmans.
- Shigley, "Mechanical Design," McGraw-Hill.
- Rabinowicz, "Friction and Wear of Materials," Wiley.