# MILLING GRADE OVERVIEW IN STAINLESS STEEL OPERATION

TECHNICAL GUIDE

ISO 513

| STAINLESS STEEL | Range | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Uncoated | | HWM 102 | | | | | | | | |
| | | | | | HWP 302 | | | | | | |
| | CVD | | | | | HCP 252 | | | | | |
| | | | | | HCP 302 | | | | | | |
| | PVD | | | | | | | HPP 202 | | | |
| | | | | | | HPP 252 | | | | | |
| | | | | | | | HPP 302 | | | | |
| | | | | | | | | HPP 352 | | | |
| | | | | | | | HPP 402 | | | | |
| **Vc** | m/min | | 150 - 250 | | 120 - 220 | | | | | | |

**Finishing**

**Vc increasing**
**Vf small**
**ap small**
**Wear resistance increasing**
**Toughness decreasing**

◀ ▶

**Roughing**

**Vc decreasing**
**Vf large**
**ap large**
**Wear resistance decreasing**
**Toughness increasing**

| | SCALE 0-10=RANGE OF TN Toughness / WR Wear resistance | | | | | | | | | APPLICATION Cutting condition | | APPLICATION Machining condition | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **HM - GRADE** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | DRY | WET | **F** | **M** | **R** |
| **HWM 102** | TN | | | | | | | | | | | | | |
| | WR | | | | | | | | | | | | | |
| **HWP 302** | TN | | | | | | | | | | ● | | ● | ○ |
| | WR | | | | | | | | | | | | | |
| **HCP 252** | TN | | | | | | | | | ○ | ● | ○ | ● | ● |
| | WR | | | | | | | | | | | | | |
| **HCP 302** | TN | | | | | | | | | | | | | |
| | WR | | | | | | | | | | | | | |
| **HPP 202** | TN | | | | | | | | | ● | ○ | ○ | ● | ○ |
| | WR | | | | | | | | | | | | | |
| **HPP 252** | TN | | | | | | | | | ● | ○ | ● | ● | ○ |
| | WR | | | | | | | | | | | | | |
| **HPP 302** | TN | | | | | | | | | | | | | |
| | WR | | | | | | | | | | | | | |
| **HPP 352** | TN | | | | | | | | | ● | ○ | ● | ● | ○ |
| | WR | | | | | | | | | | | | | |
| **HPP 402** | TN | | | | | | | | | | | | | |
| | WR | | | | | | | | | | | | | |

| Cutting conditions | Machining conditions | | Recommendation |
|---|---|---|---|
| DRY = without COOLING | **F** | Finishing | ● Ideal |
| | **M** | Medium machining | ○ Stil recommended |
| WET = with COOLING | **R** | Roughing | — Not recommended |