

DC53 Applications & Check List

DC53 is a general purpose cold work tool steel with exceptional Toughness, Wear Resistance, Compressive Strength and Temper Resistance. These properties are obtained through its chemistry as well as its unique manufacturing process of ladle refinement, vacuum degassing and forging methods. DC53 has excellent machining characteristics and is well suited as a sub-straight for PVD and Nitride surface treatments. DC53 can also be hot process CVD and TD (Thermal Diffusion) coated however post heat treat is recommended.

DC53 applications to look for:

- **S7** applications with hardness specified HRC 57 or higher. The higher hardness is sought after in an attempt to achieve higher wear resistance and strength however; toughness drops nearly 30% when going from HRC 56 to HRC 58. S7 has relatively low wear resistance, compressive strength, and temper resistance. DC53 has exceptional toughness as well as vastly superior wear resistance, strength, and temper resistance than that of S7.
- **A2** applications – When wear and high load are a concern. Also when applying surface treatments. DC53 has greater wear resistance, strength, and temper resistance to support surface treatments without sacrificing machining and grinding characteristics.
- **D2** application – DC53 almost ALWAYS outperforms D2. DC53 has greater toughness, wear resistance, compressive strength, and temper resistance as well as better machining and grinding characteristics.
- **M2** applications with hardness specified below HRC 60 or when additional toughness is needed. M2 will lose much of its strength and wear resistance when hardened below HRC 60 which presents opportunities. DC53 has superior toughness at equal hardness with nearly the same wear resistance.
- **A11** High vanadium PM (Particle Metallurgy) and **PM M4** applications experience chipping, cracking and or breakage where DC53 even at HRC 62–64 has vastly higher toughness than either grade.

Available Sizes:

Rounds ¼” to 20”

Contact IMS for ¼” to 7/8” Dia.

Flats ½” to 12” thick up to 30” wide

Contact IMS for widths over 16”

For Sales Assistance:

Inside Sales

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DC53 Applications & Check List

Application:

What is the current application?

- Punch
- Die Button or Section
- Form Block
- Shear Blade
- Shredder Blade
- Thread & Form Roll
- Cold Heading Punch
- Cold Heading Die
- Mill Roll
- Slitter Knife
- Other _____

Date: _____

Sales Person: _____

Phone #: (____) _____

Customer: _____

Contact: _____

Phone #: (____) _____

Heat #: _____

Tool Steel:

Current Tool Steel Grade: _____ Heat Treater: _____

Current Tool Steel Hardness: _____ Heat Treater Location: _____

How is the Current Tool Steel failing?

- Chipping
- Breakage
- Deformation
- Wear
- Galling
- Other _____

Number of Hits

Before Sharpening: _____

Total Tool Life: _____

Part Material:

Part Material Type: _____ Part Material Thickness: _____

Part Material Hardness: _____

Surface Treatments

Have surface treatments been applied to the tooling?

- Yes No

If Yes, what type? _____

If so, what process and temperature was used to apply the surface treatment?

Process: _____

Temperature: _____

Was the tooling heat treated after the surface treatment was applied?

- Yes No

If so, how? _____