

News Release

October 29, 2024
Proterial, Ltd.

New Cold Dies Steel with High Toughness^{*1} and Machinability Received the Minister of Education, Culture, Sports, Science and Technology Award at the Chugoku Region Invention Honors for Fiscal Year 2024

Proterial, Ltd. (hereinafter “Proterial”) has been awarded the Minister of Education, Culture, Sports, Science and Technology Award, a prize of the highest rank, at the Chugoku Region Invention Honors by the Japan Institute of Invention and Innovation for its new cold dies steel with high toughness and machinability (invented by Kana Morishita).

1. Invention

New cold dies steel with high toughness and machinability (Patent number. 5672466)

2. Awardees

"Minister of Education, Culture, Sports, Science and Technology Awards (MEXT Minister's Award)"
Kana Morishita, Cold Working Dept., Yasugi Works, Specialty Steel Business Unit, Proterial, Ltd.

3. Invention overview

The application of high-tensile steel sheets is expanding for automotive frame parts (stamped parts) as a way to improve collision safety and reduce weight. Use of high-tensile steel sheets with higher strength and hardness has made damage to molds during processing a serious issue. Moreover, owing to demands to shorten lead times throughout supply chains, there is a growing need to shorten the processing preparation time, including mold production, process control, and design in the development and production of processed products.

SLD[®]-f new cold dies steel with high toughness and machinability developed by Proterial has a composition that facilitates the creation of Belag^{*2} as well as carbide miniaturization and reduction, allowing for high machinability^{*3} that is approximately 3.5 times higher than the standard cutting conditions of SKD11, which is the cold dies steel in general use, thus contributing to improved cutting speed and shorter mold processing time for customers. Moreover, because of its high toughness, it exhibits excellent durability and chipping resistance when used as a mold. Stable hardness can be achieved even with the application of high-temperature tempering, so it is effective in keeping down dimensional changes during PVD treatment^{*4}.

Proterial will continue to propose solutions that support transformation in the mold industry to meet the needs of achieving higher quality by developing new materials and solution technologies that solve customer issues.



SLD-f, new cold dies steel with high toughness and machinability

4. Patents

Patents granted internationally

Media Inquiries: Corporate Communications Dept.

https://www.cntct.proterial.com/contact/publish/inquiry_eng?g=01&c=001-01

SLD is a registered trademark of Proterial, Ltd.

Proterial, Ltd.

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*1 The tenacity of a material, signifying its resistance to destruction.

*2 An oxide-based protective film formed on the cutting edge of a tool from the material being cut during cutting.

*3 From the “SLD-f” Hitachi Metals, Ltd. news release on August 19, 2021

<https://www.proterial.com/press/backnumber/2021/n0819.html>

*4 Short for “physical vapor deposition.” A surface modification technology that produces a thin ceramic film on metal.

The thin film grants various properties such as abrasion resistance, galling resistance, slip resistance, welding resistance, heat resistance, and corrosion resistance.

■About PROTERIAL

PROTERIAL

“Proterial” reflects the essence of our corporate philosophy, which consists of three elements: Mission: “Make the best quality available to everyone;” Vision: “Leading sustainability by high performance;” and Values: “Unflinching integrity” and “United by respect.” It combines “**pro-**” with the word “**material.**”

“Pro-” represents our “three pros”:

- **Professional — work that exceeds expectations**
- **Progressive — a spirit that keeps challenging**
- **Proactive —an enterprising attitude**

“Material” refers to the high-performance materials that our original technologies produce and underpinned by the three pros. With our focus on solving customer issues and bringing new levels of value, we promise to contribute to the realization of a sustainable society through the products and services that embody our philosophy.

■Proterial, Ltd. — Company Overview

Established: April 1956

Head office: Toyosu Prime Square, 5-6-36 Toyosu, Koto-ku, Tokyo 135-0061, Japan

Capital: 310 million yen (as of March 31, 2024)

Representative: Sean M. Stack

Representative Director, Chairman, President and Chief Executive Officer (CEO)

Sales revenue: 1,033.2 billion yen (Term ended March 2024)

History: 1910: Founded as Tobata Foundry Co.

1937: Merged with Hitachi, Ltd.

1956: Established separately as Hitachi Metals Industries, Ltd.

2023: Company separated from the Hitachi Group, and renamed from Hitachi Metals, Ltd. to Proterial, Ltd.

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