

# DAP™-AM Series – Metal Powders for 3D Printing –

Daido Alloy Powder – for Additive Manufacturing (High Thermal Conductivity)

## High thermal conductivity Metal Powder DAP™-AM HTC45 for Laser Metal Deposition

The SKD61-based powder adjusted to a composition suitable for additive manufacturing of die-casting molds. Hardness suitable for die-casting molds can be obtained by just laser metal deposition.

### Feature

- DAP™-AM HTC45 has spherical shape, low oxygen content and high flowability produced by gas atomization.
- DAP™-AM HTC45 is cobalt free material, the same as SKD61.
- The hardness suitable for die-casting molds of 45-48HRC can be obtained by laser metal deposition, and no post-heat treatment is required.
- The high thermal conductivity of the overlay portion enhances the cooling effect of the mold. In addition, thermal stress can be reduced and heat checking can be effectively suppressed.

### Typical Chemical composition, hardness and application

DAP™-AM Series	Equivalent steel grad	Hardness range after laser metal deposition (HRC)	Typical chemical composition (mass%)					Application
			C	Si	Cr	Mo	V	
DAP™-AM HTC45	SKD61 type Die Steel	45~50	0.23	0.1	5	1.2	0.4	Repair of die casting molds

Particle size : -150/+53µm

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### Characteristics

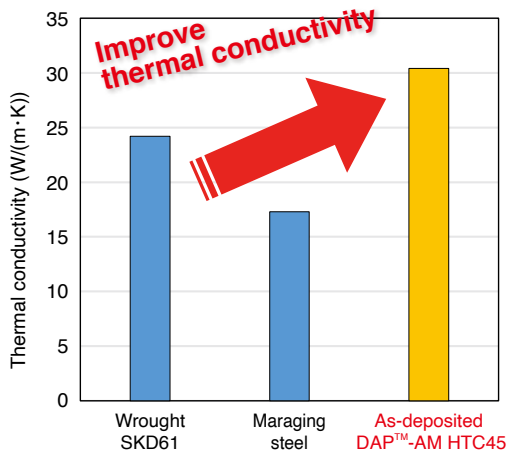


Fig.1 Thermal conductivity at RT

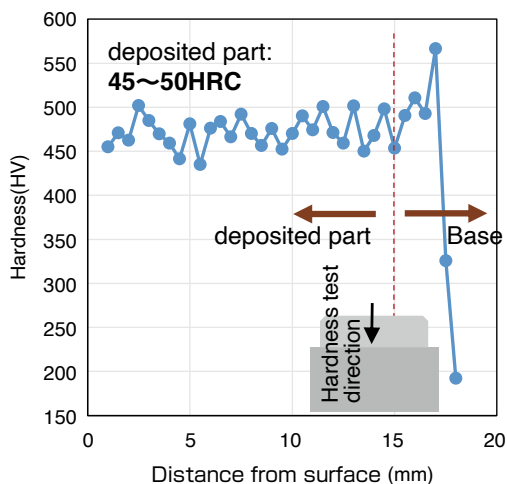


Fig.3 Hardness distribution of deposited sample

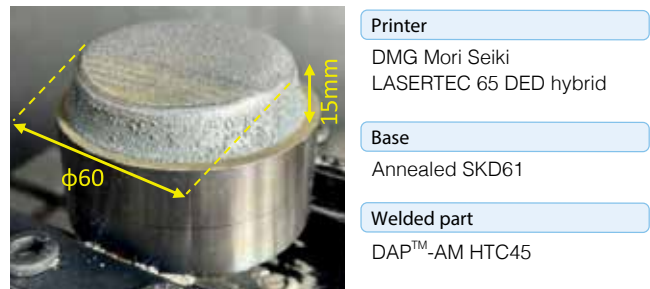


Fig.2 Overview of deposited sample (3D-printed by FUJI co.,LTD )

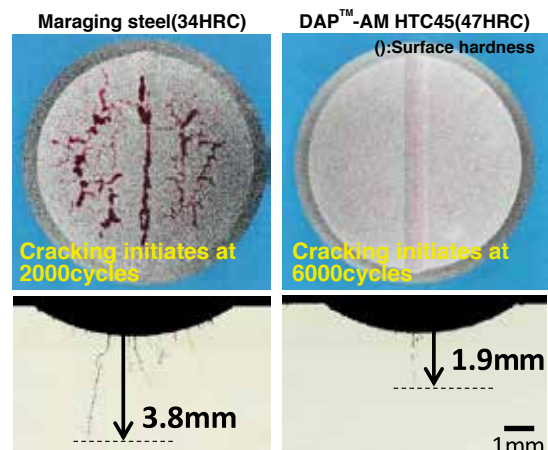
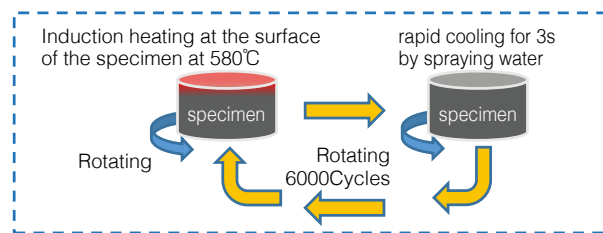


Fig.4 Heat check test results of deposited specimens (After 6000cycles, notch shape:R=6mm, depth:1mm)



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