



### FINKL H11

AISI H11 - W.Nr. 1.2343 - X37CrMoV5-1

### HOT WORK TOOL STEEL

#### TYPICAL APPLICATIONS

- Tooling for Aluminum Die Casting
- Aluminum and magnesium extrusion dies
- Die inserts and forging dies
- Plastic Mold Dies
- Cores, sleeves and slides

#### GENERAL

##### Delivery Condition:

Annealed to 229 BHN Max.

##### Quality Levels:

**H11:** Die Quality for Forging

**H11Q ESR or VAR:** Remelted Fine Structure

Quality for high requirement Die Casting NADCA Grade D.

**FINKL H11** is a high quality tool steel with high impact resistance. They also has good wear and heat checking resistance at high temperature.

**FINKL H11** is a H11 steel with high heat checking resistance. Alloy composition is balanced in order to reduce primary carbide formation for improved fracture toughness higher than 14 ft-lbs (19 J).

**FINKL H11** has an excellent combination of high strength and toughness and can reach hardnesses typically in the 42 to 52 HRC range with standard hardening procedures by most vacuum heat treating operations.

#### Typical Chemical Analysis - % weight

C	Mn	Si	Cr	Mo	V
0.37	0.50	1.00	5.15	1.25	0.40

**FINKL H11** is forged using a special densifying process which assures optimum consolidation of centers.

**FINKL H11** is forged on our largest presses equipped with wide dies assuring maximum deformation during forging process.

**FINKL H11** is characterized by :

- High wear resistance
- High heat checking resistance
- Improved fracture toughness
- High impact resistance

**FINKL H11** 100 %ultrasonic tested to very stringent acceptance levels. It is defect free.

**FINKL H11Q** can be supplied pre-certified to NADCA standard #207 Grade D on request.

®Finkl Steel Trademark

# DATA SHEET

## HOT WORK TOOL STEEL

### FINKL H11

#### HEAT TREATMENT

##### ANNEALING

Temperature: 1500-1550°F (815-845°C)  
Rate of cooling: 25°F (15°C) max per hour  
Typical annealed hardness: 229 BHN Max.

Key parameter of the NADCA recommended procedure for hardening dies for die casting service are:

##### HARDENING

Rate of heating: slow  
Preheat Temperature: 1200-1300°F (650-705°C)  
Hardening Temperature: 1830°F (1000°C)  
Time at temperature: 30-45 minutes  
Quenching to 300°F (150°C)

##### TEMPERING

Tempering Temperature: 1050°F (565°C) minimum

##### STRESS RELIEVING

Temperature: 50-100°F (30-55°C) below final tempering temperature and slow cool to 875°F (470°C), then air cool.

**Note:** Provided technical data and information in this data sheet are typical values. Normal variations in chemistry, size and conditions of heat treatment may cause deviations from these values. We suggest that information be verified at time of enquiry or order. For additional data or metallurgical assistance, please contact us.

#### SIZE

(Finished / approx.)

Max weight	16 330 kg	36 000 lbs
Max section	0.90 m <sup>2</sup>	1 400 sq in
Max width	1 270 mm	50"
Max thickness	760 mm	30"



FINKL STEEL offers select customers the opportunity to participate in the Finkl Partner Program, a Web-based system that allow for:

- Online quoting and ordering
- Real-time order tracking
- Customized report generation

Contact your Finkl representative to learn more about online business services.

#### Finkl Steel—Chicago

1355 E. 93rd Street  
Chicago, IL 60619

773.975.2510

TOLL-FREE: 800.621.1460

FAX: 773.348.5347

[www.finkl.com](http://www.finkl.com)

#### Finkl Steel—Sorel

100 McCarthy Street St-  
Joseph-de-Sorel, QC,  
Canada J3R 3M8

450.746.4122

TOLL-FREE: 800.363.9484

[www.sorelforge.com](http://www.sorelforge.com)

#### Finkl Steel—Composite

2300 W. Jefferson Avenue  
Detroit, MI 48216

313.496.1226

TOLL-FREE: 800.521.0520

[www.compforge.com](http://www.compforge.com)



# FINKL STEEL