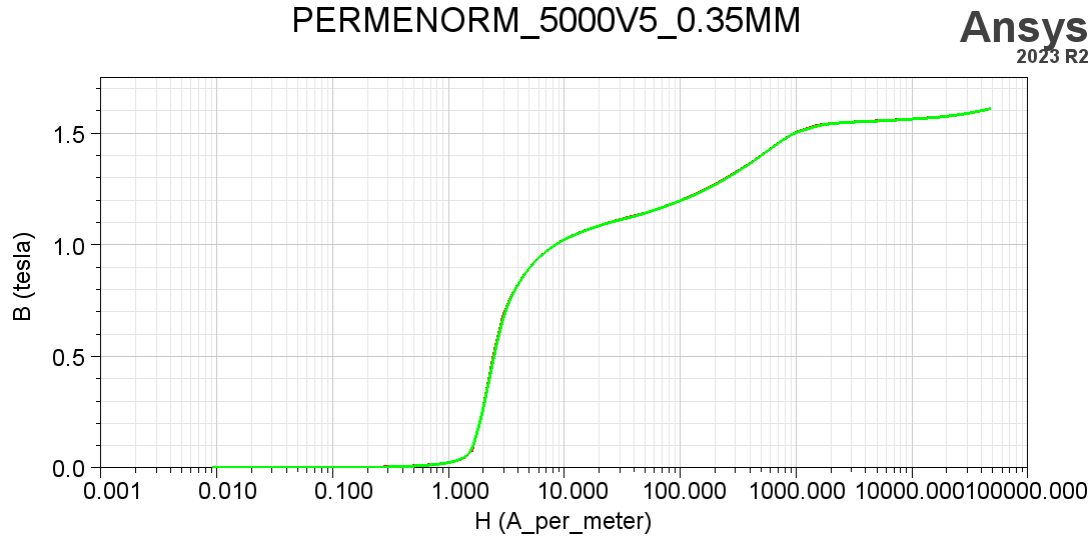
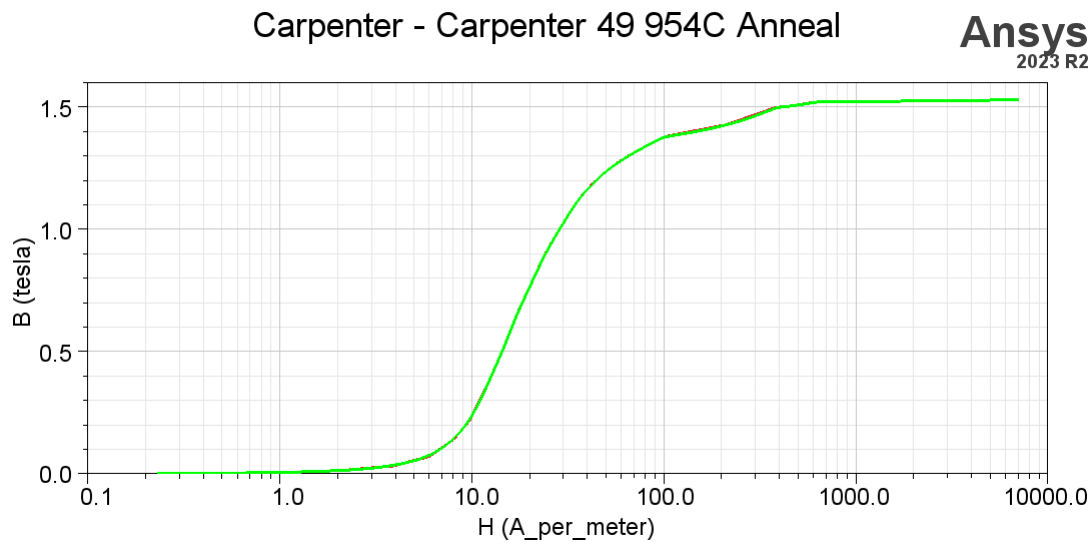


## Electrical Steel B-H Curves (TFG\_Zxx)

Permenorm 5000V5 0.35mm {Log} (Note: This was the original target TFG\_Zxx material)  
(**PREFERED** but not available at this time)



Carpenter - Carpenter 49 954C Anneal {Log} (Note: This material will be the TFG\_Zxx)  
(Annealed at 954° C **TARGET MATERIAL**)



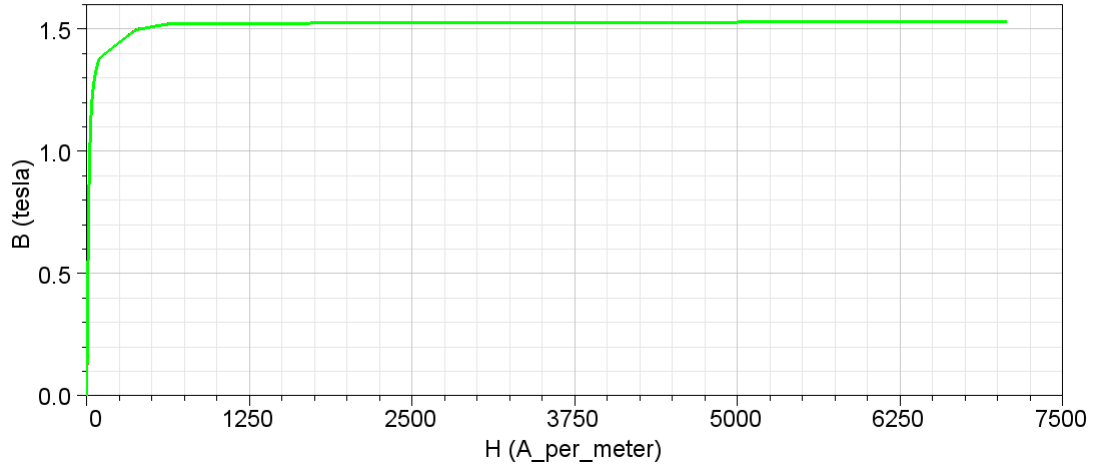
**COMMENT - NOTE:** At B=10 A/meter Permenorm is better (~ 1.0T vs 0.2T); however at B=100 A/meter Carp 49 appears to have slightly better performance (1.2T vs 1.4T). Permenorm\_5000\_V5 is PREFERED for TFG\_Zxx.

**Carpenter - Carpenter 49 954C Anneal {Lin}**

*(Note: This material will be the TFG\_Zxx)  
(Annealed at 954° C **TARGET MATERIAL**)*

**Carpenter - Carpenter 49 954C Anneal**

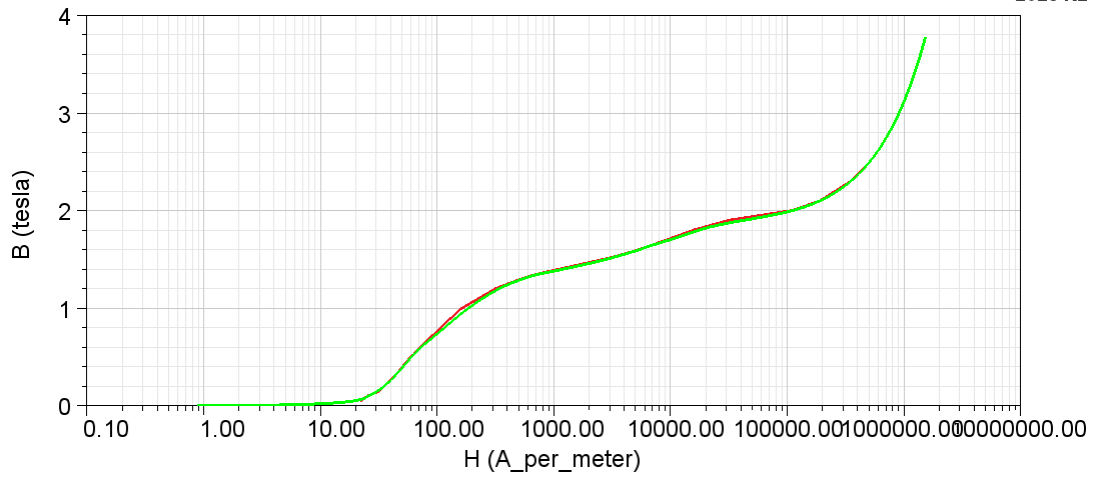
**Ansys**  
2023 R2



**M19\_24G {Log}** *(Note: This material will be used as a Performance Test Comparison)*

**M19\_24G**

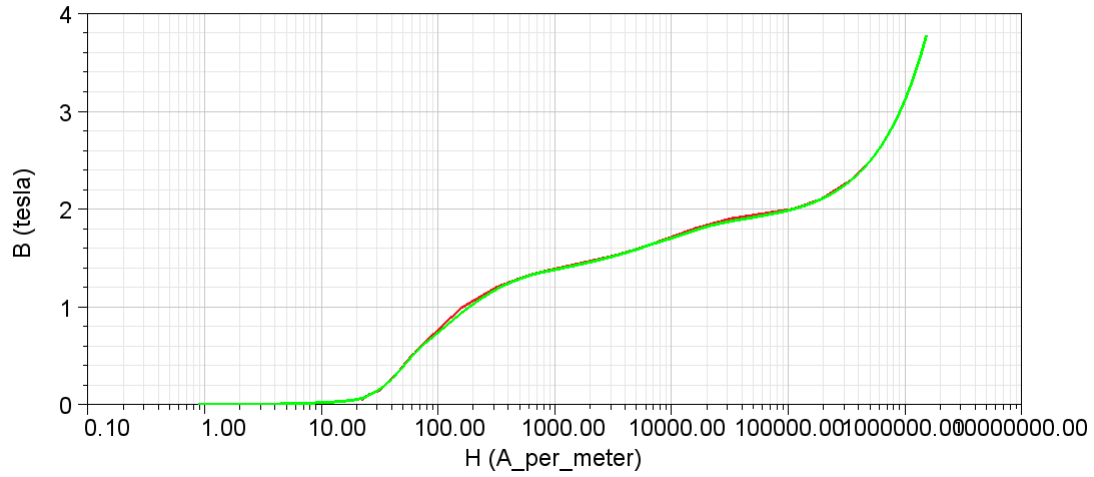
**Ansys**  
2023 R2



**M19\_26G {Log}**

M19\_26G

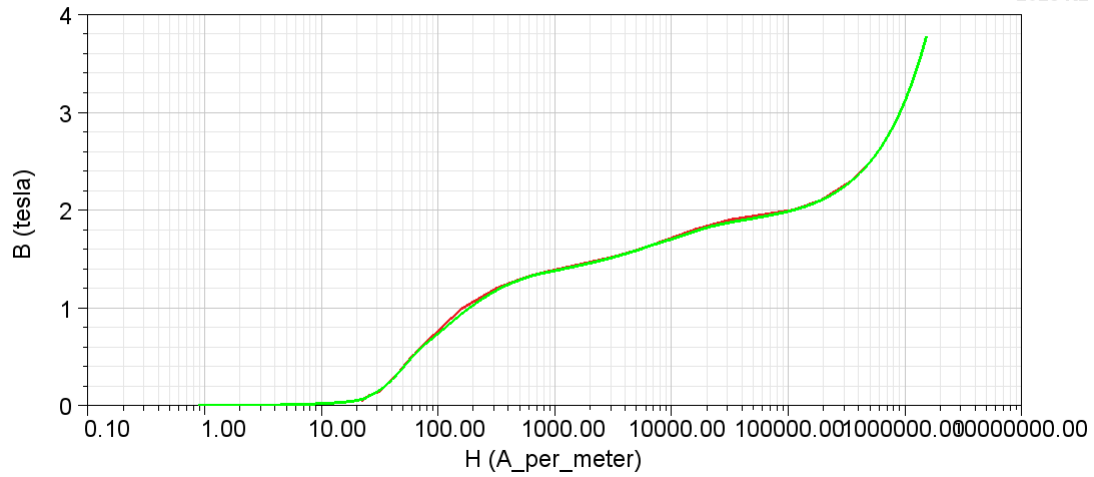
**Ansys**  
2023 R2



**M19\_29G {Log}**

M19\_29G

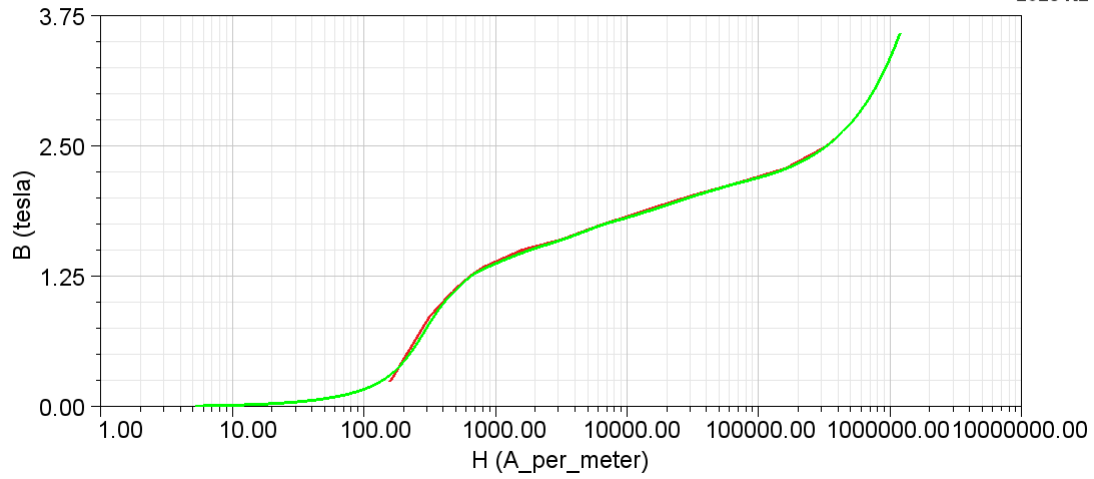
**Ansys**  
2023 R2



**Steel\_1008 {Log}**

steel\_1008

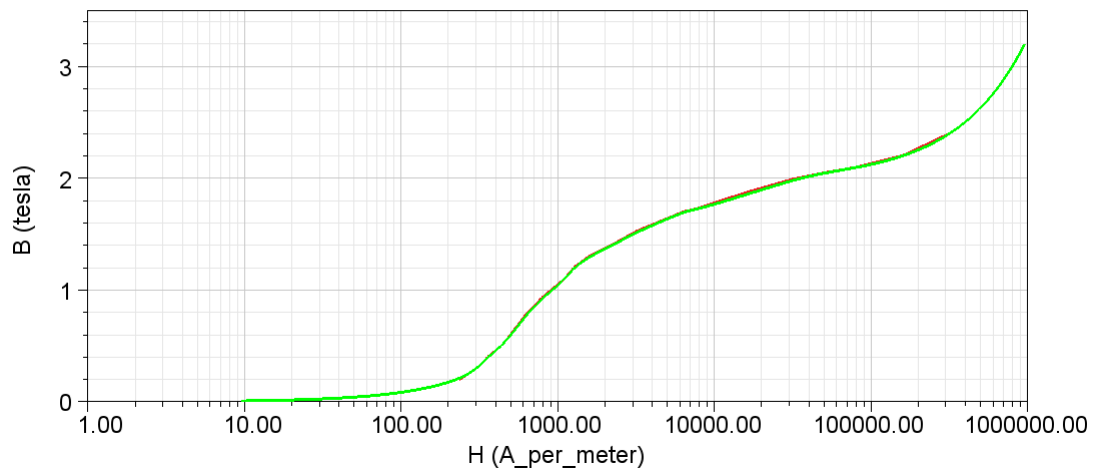
**Ansys**  
2023 R2



**Steel 1010 {Log}**

steel\_1010

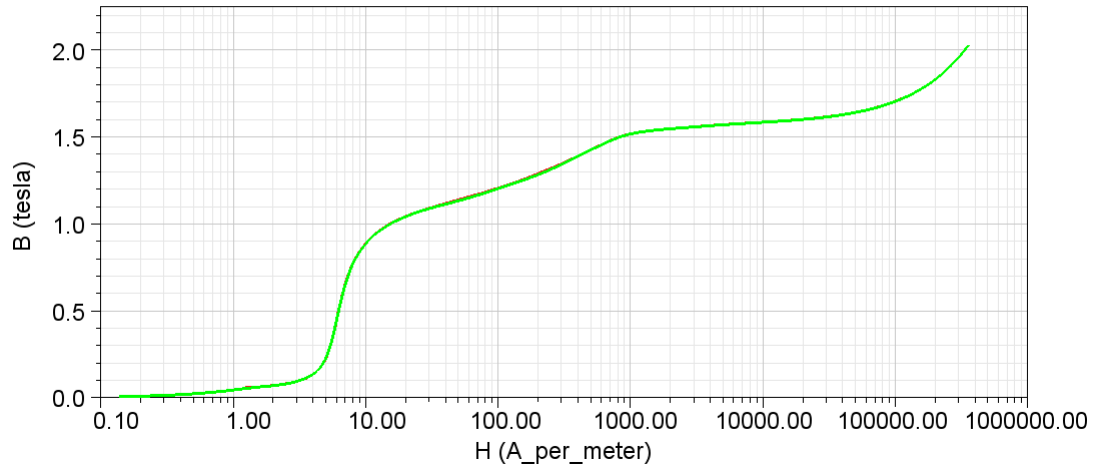
**Ansys**  
2023 R2



**Carpenter High Permeability 49 0.15mm {Log}** (Note: This material will be the TFG\_Zxx)  
(See the Annealed curve below)

Carpenter - High permeability '49', 0.15mm

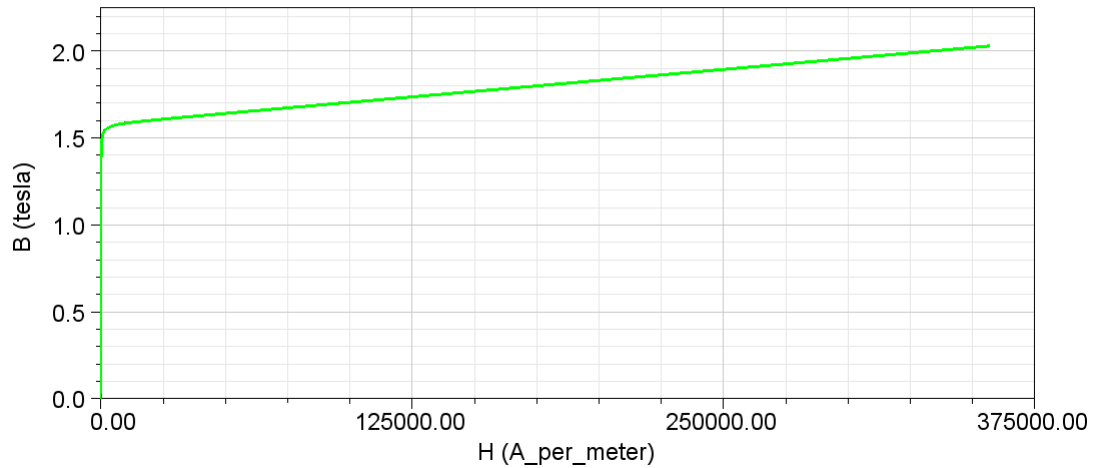
**Ansys**  
2023 R2



**Carpenter High Permeability 49 0.15mm {Lin}** (Note: This material will be the TFG\_Zxx)  
(See the Annealed curve below)

Carpenter - High permeability '49', 0.15mm

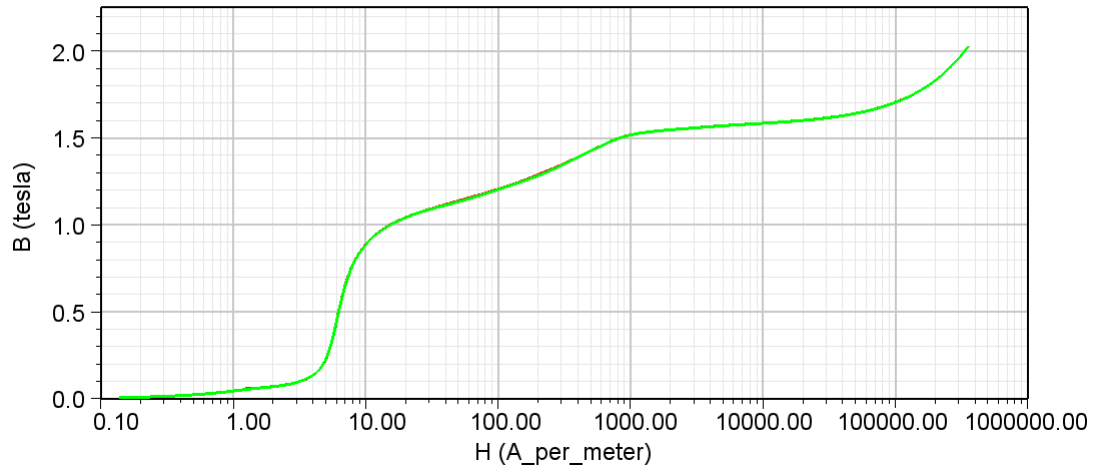
**Ansys**  
2023 R2



**Carpenter - High permeability 49 0.10mm {Log}**

Carpenter - High permeability '49', 0.1mm

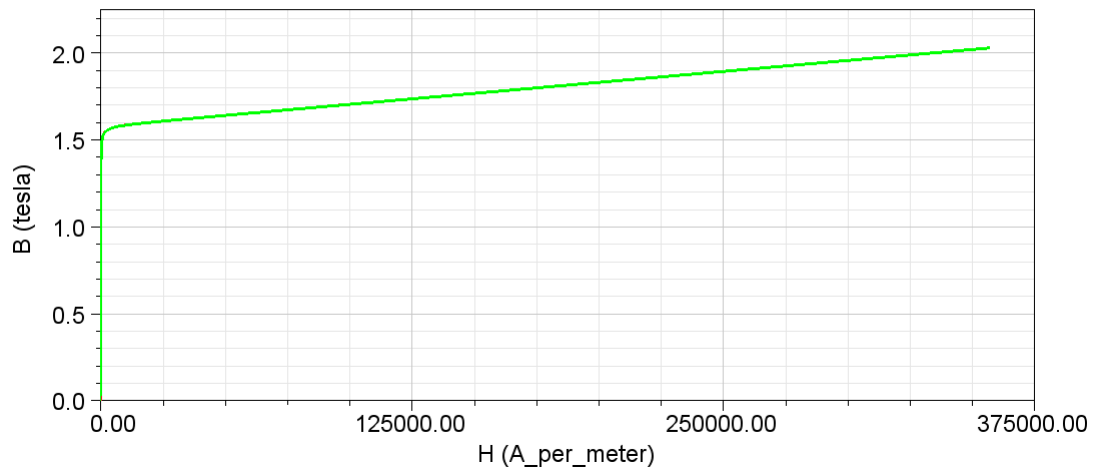
**Ansys**  
2023 R2



**Carpenter High Permeability 49 0.10mm {Lin}**

Carpenter - High permeability '49', 0.1mm

**Ansys**  
2023 R2

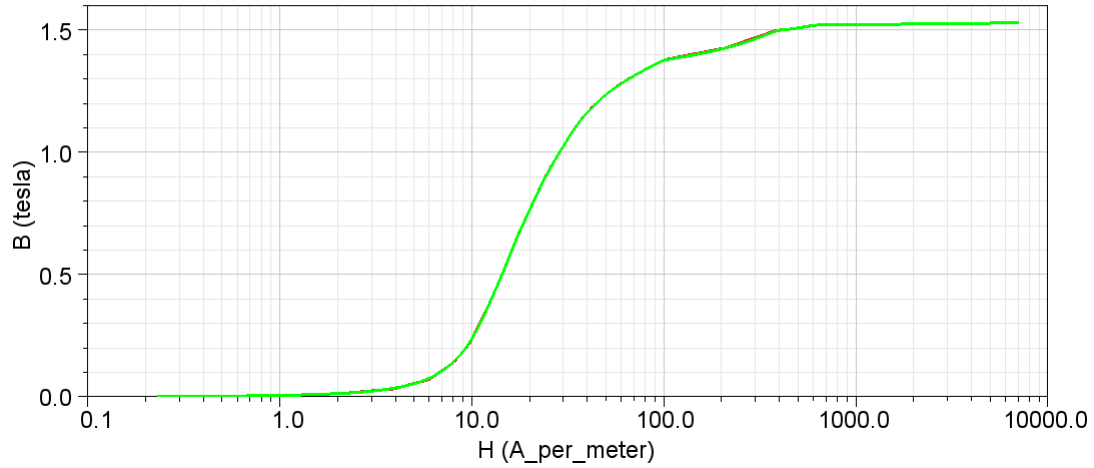


**Carpenter - Carpenter 49 954C Anneal {Log}**

*(Note: This material will be the TFG\_Zxx)  
(Annealed at 954° C **TARGET MATERIAL**)*

**Carpenter - Carpenter 49 954C Anneal**

**Ansys**  
2023 R2

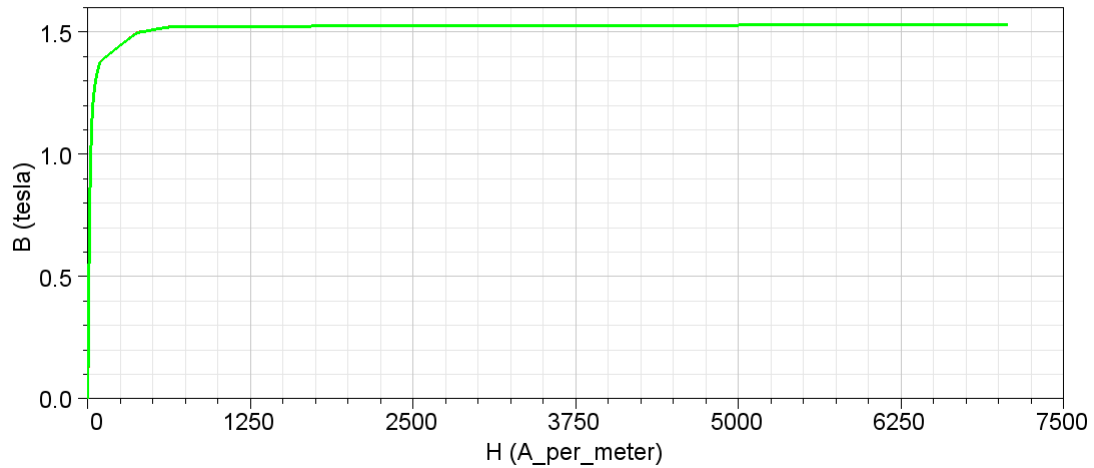


**Carpenter - Carpenter 49 954C Anneal {Lin}**

*(Note: This material will be the TFG\_Zxx)  
(Annealed at 954° C **TARGET MATERIAL**)*

**Carpenter - Carpenter 49 954C Anneal**

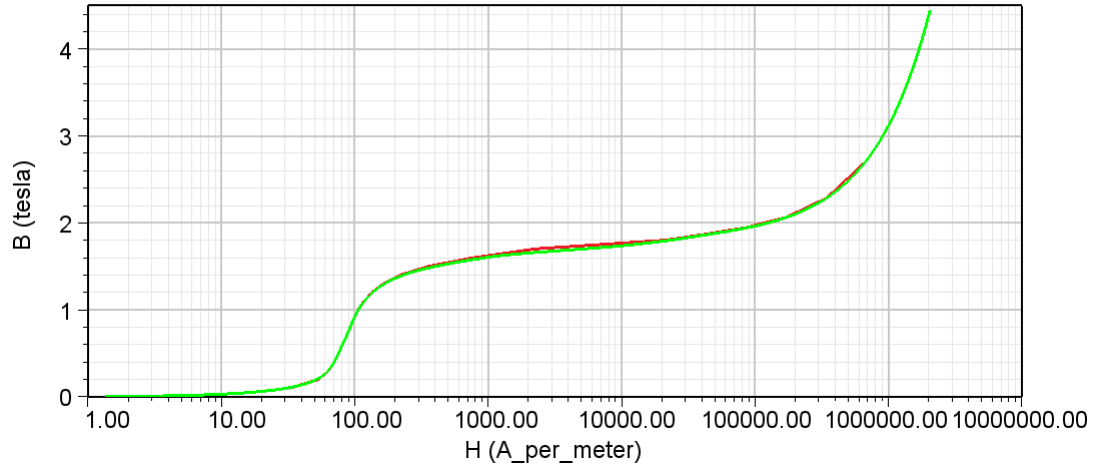
**Ansys**  
2023 R2



**Carpenter - Consumet (99.58% Fe) 843C Anneal {Log}**

Carpenter - Consumet (99.58%Fe) 843C Anneal

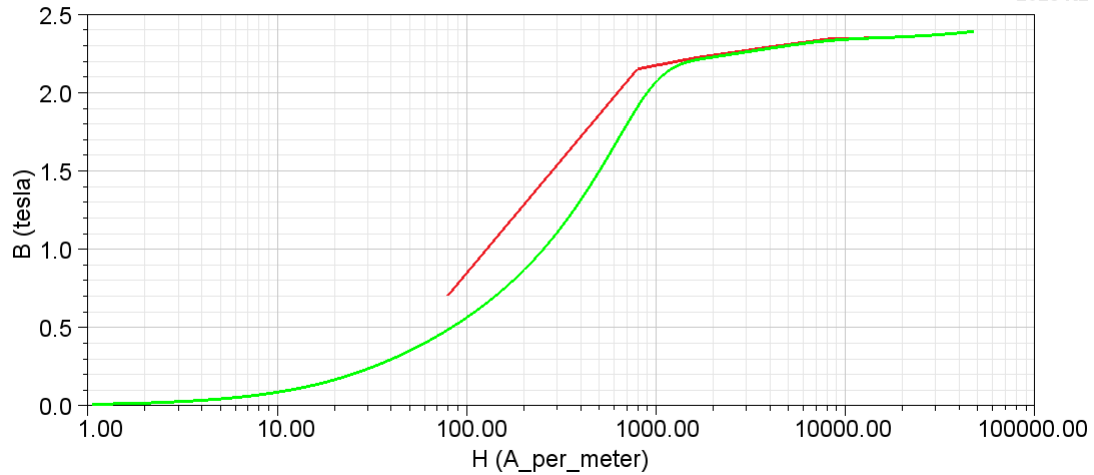
**Ansys**  
2023 R2



**Carpenter - Permendur 49 (red is dataset, green is interpolation) {Log}**

Carpenter - Permendur49

**Ansys**  
2023 R2

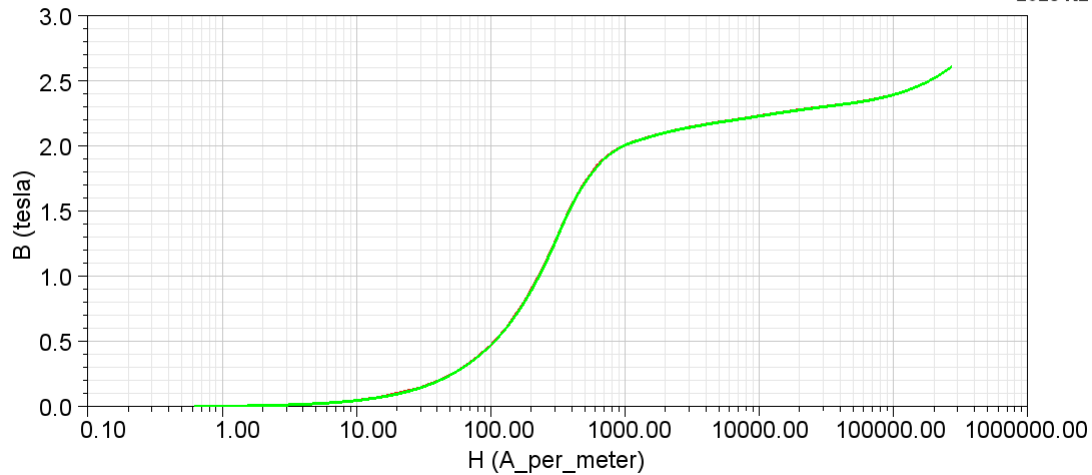




**Carpenter - Hiperco 50 {Log}**

Carpenter - Hiperco 50

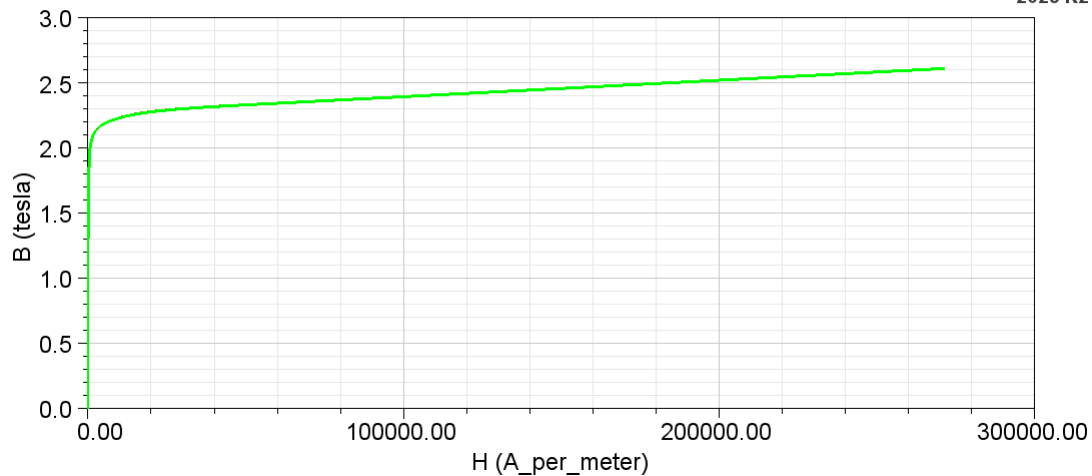
**Ansys**  
2023 R2



**Carpenter - Hiperco 50 {Lin}**

Carpenter - Hiperco 50

**Ansys**  
2023 R2



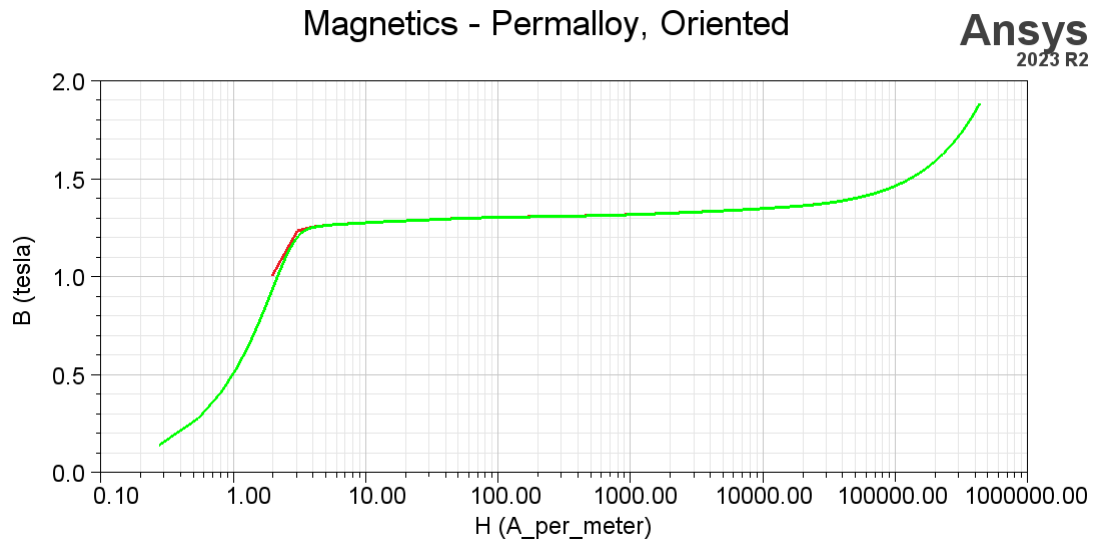
**NOTE:** (1.) Permenorm\_5000V5 0.35mm - 0.14mm is the **PREFERED** material for use in the TFG\_Zxx 1/2 Pole pieces.

(2.) Carpenter High Permeability 49 0.14 will replace the Permenorm\_5000V5 0.35mm in the TFG\_Zxx 1/2 Pole pieces since Permenorm is not in stock or available.

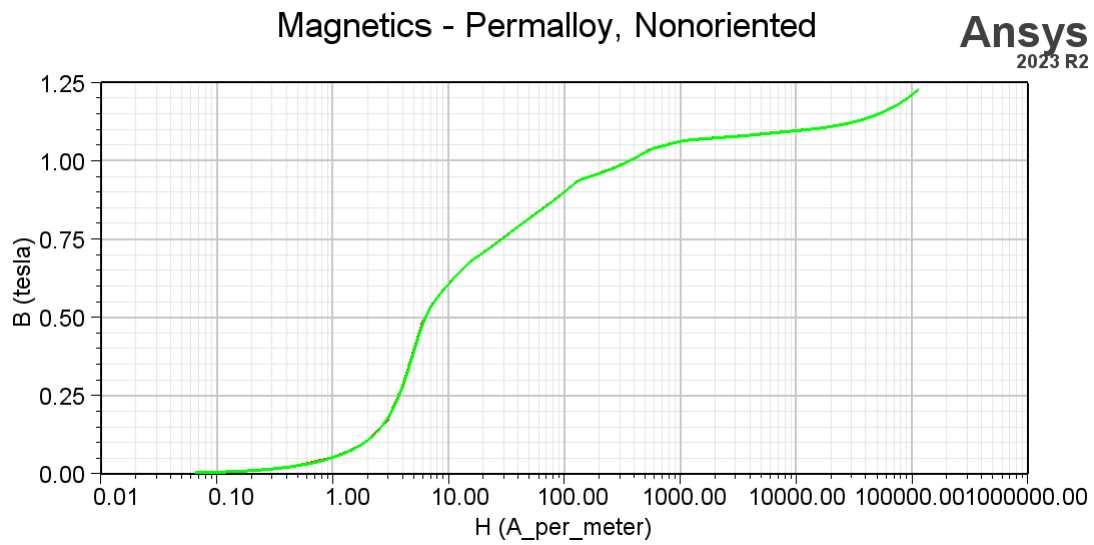
(3.) A second set of M19 Steel 1/2 Pole pieces will be fabricated to serve as a Test Performance comparison study.

## Others

### Magnetics - Permalloy Oriented



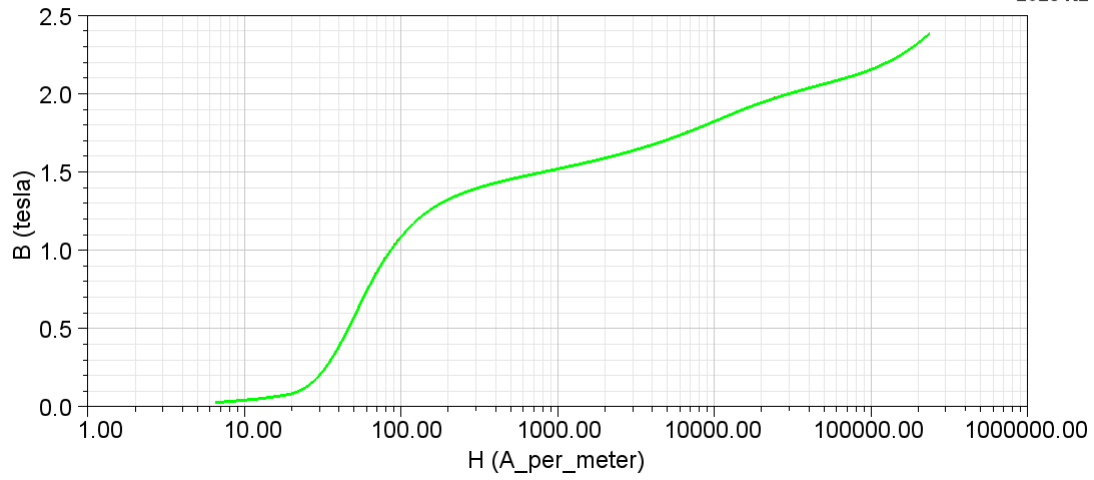
### Magnetics - Permalloy Nonoriented



ChinaSteel\_35CS250H

ChinaSteel\_35CS250H

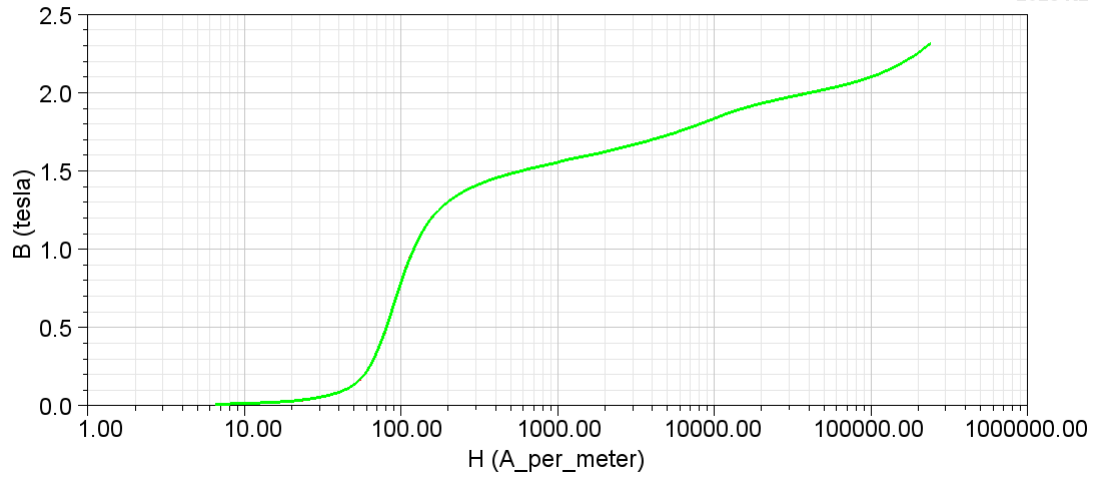
Ansys  
2023 R2



ChinaSteel\_50CS470

ChinaSteel\_50CS470

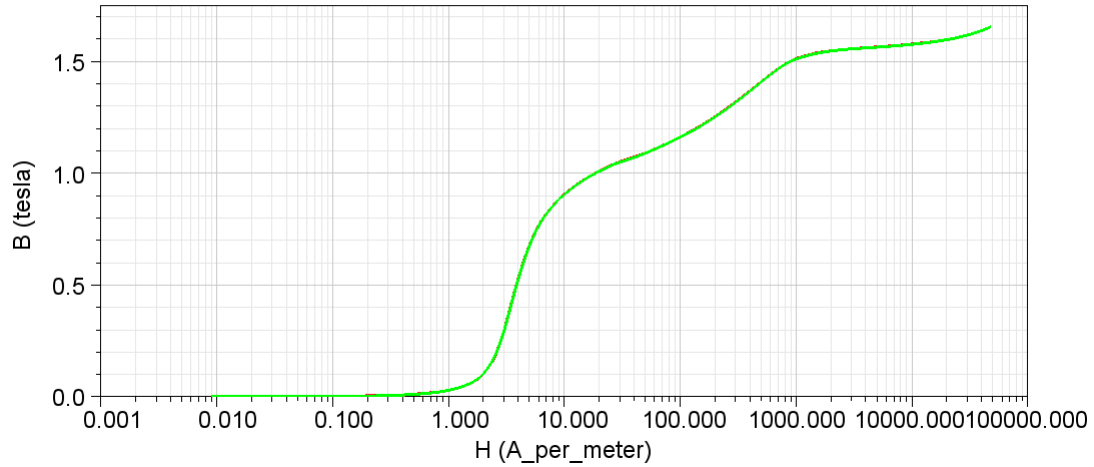
Ansys  
2023 R2



Permenorm5000V5\_0.10mm Vacuumschmelz

PERMENORM\_5000V5\_0.10MM

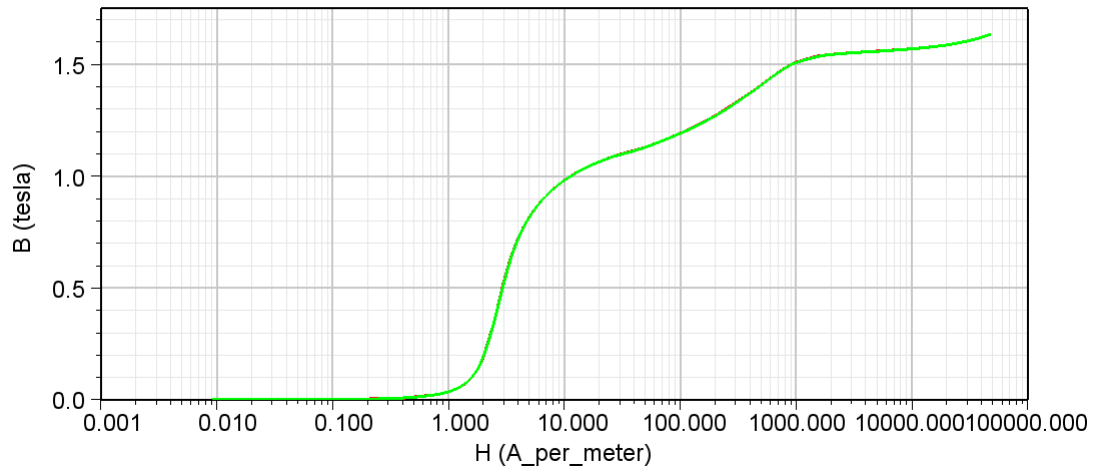
Ansys  
2023 R2



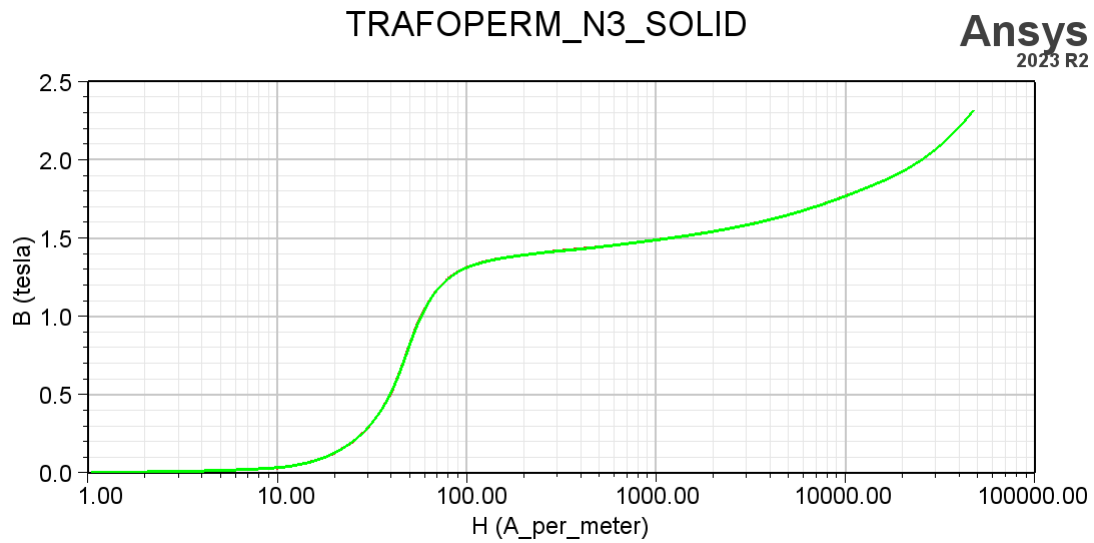
Permenorm\_5000V5\_0.20mm Vacuumschmelz

PERMENORM\_5000V5\_0.20MM

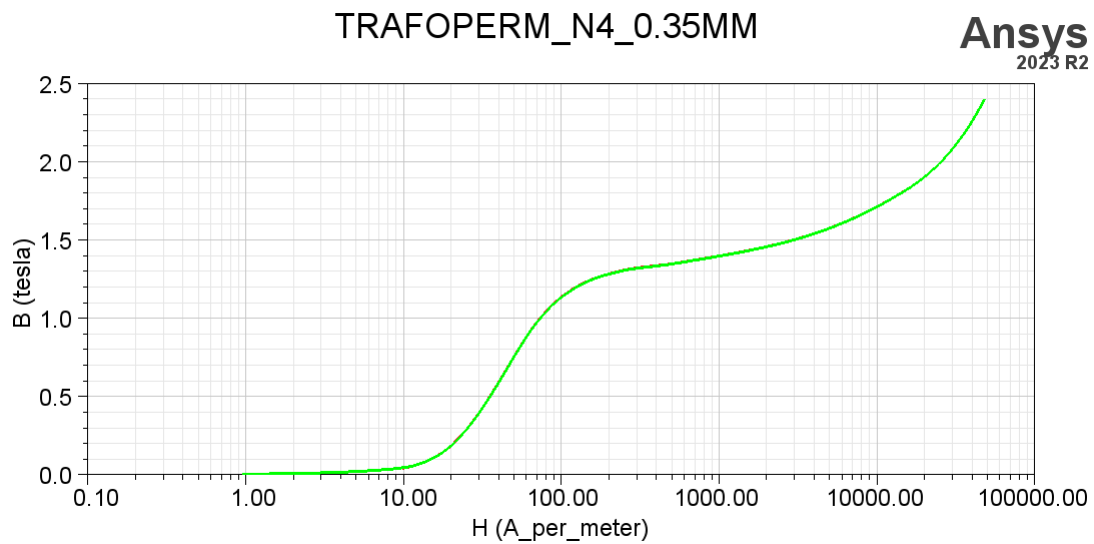
Ansys  
2023 R2



Trafoperm\_N3\_Solid Vacuumschmelz



Trafoperm\_N4\_0.035mm Vacuumschmelz



# Wrought iron

## Wrought iron

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