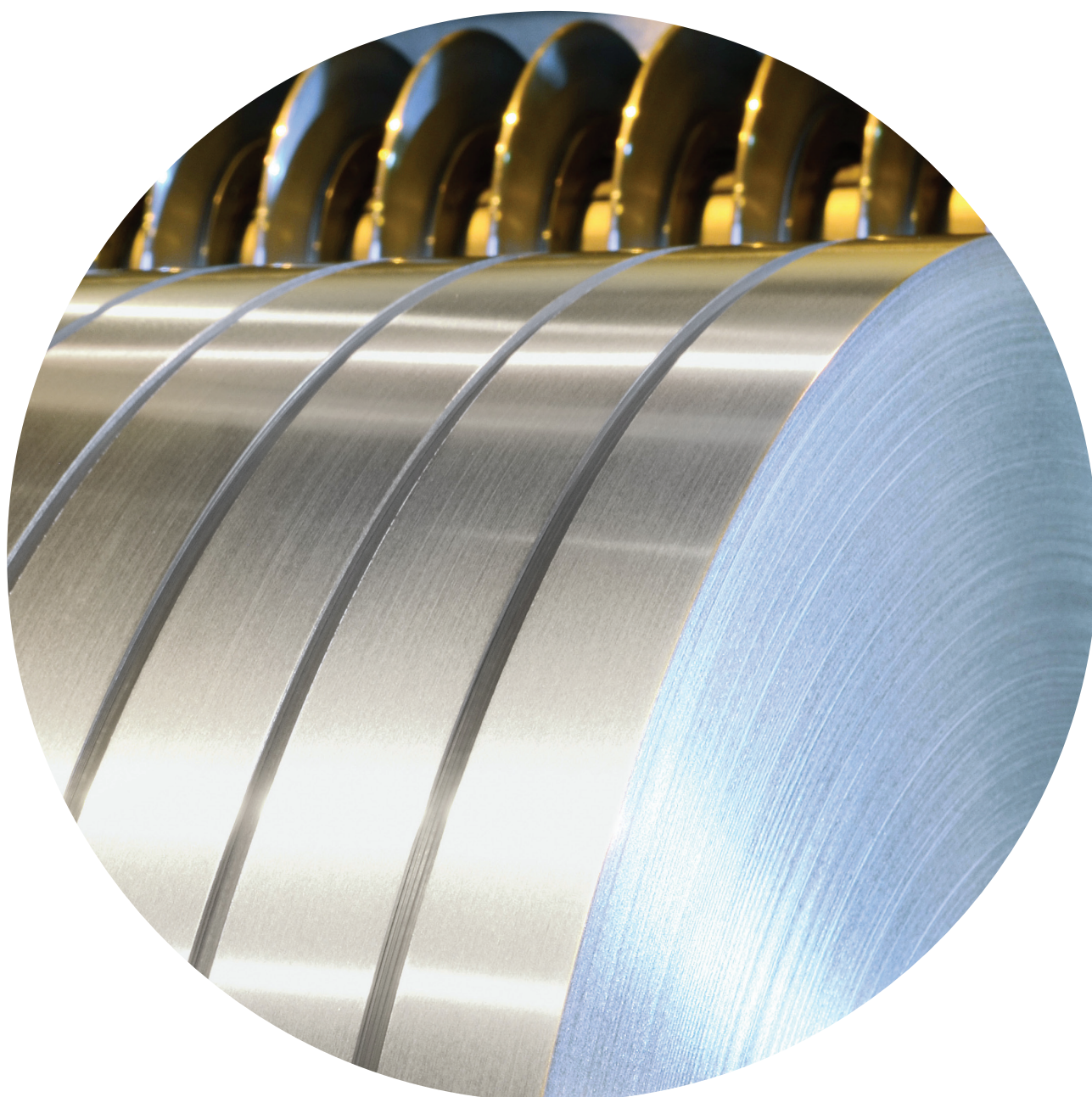


HYDEC 1070



HYDEC 1070 aluminium windings for electro-technical applications



HYDEC 1070

Hydro - your global supplier of electro-technical aluminium.

Karmøy Rolling Mill (KRM) has a long tradition in supplying aluminium windings for electro-technical applications such as distribution transformers. Since the late seventies, KRM has been serving customers on a worldwide basis.

Production

The KRM production plant is located on the west coast of Norway and shares premises with the Hydro Karmøy Primary Metal Plant, one of Europe's largest producers of primary aluminium. Being located right next door to this smelter gives us tremendous advantages. From the smelter, KRM directly receives high purity liquid aluminium, which ensures that the conductors being produced from it have superb conductivity (Typ. 63.0% IACS).

The primary metal production facilities at the Karmøy plant as well as the processing of Hydec products, are based entirely on renewable energy sources from nearby hydro-electric power stations.

KRM specializes in converting liquid aluminium into cast metal coils, which are rolled down to a specific thickness and processed according to customer requirements.

Transport

From the deep water port at Hydro Karmøy, weekly shipments are sent to the main hubs of central Europe and forwarded by trucks direct to the customer.

Environment and recycling

Environmental awareness is a part of the Hydro culture. Contributing to the protection and sustainability of a healthy environment is embedded in everything we do.

Our efficient use of natural resources such as renewable hydro-electric power, and the production of cost-effective and environmentally compatible products is ample proof of this. With relation to the limitless recycling possibilities for aluminium, Hydec products make the most environmental sense with regard to electro-technical applications.

Partners with our customers

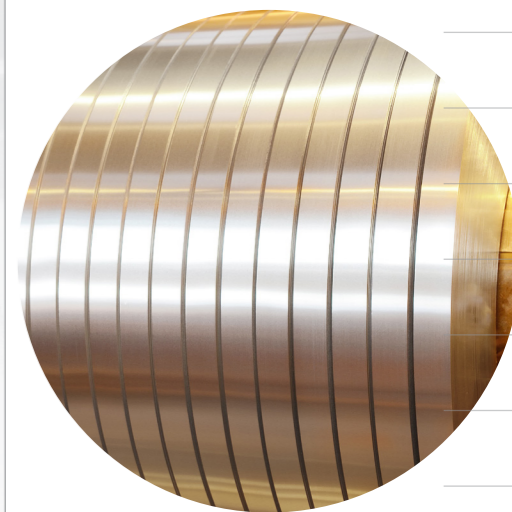
KRM has always placed great emphasis on offering services based on competence and customer satisfaction. We see our customers as partners in a mutual growth process where the quality of our products is based on reliability and predictability.

We provide high on time delivery rates based on sound planning and guaranteed product quality.

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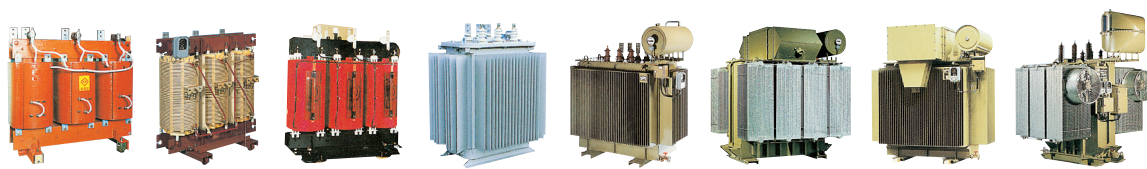
Hydro Aluminium
Rolled Products offer:

- Stable Metal Sourcing
- Short Lead Time
- Flexibility & Reliability



Hydro is a global aluminium company with production, sales and trading activities throughout the value chain, from bauxite, alumina and energy generation to the production of primary aluminium and rolled products as well as recycling.

Based in Norway, the company has 13,000 employees involved in activities in more than 50 countries on all continents. Rooted in more than a century of experience in renewable energy production, technology development and progressive partnerships, Hydro is committed to strengthening the viability of the customers and communities we serve.



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www.hydro.com

HYDEC 1070

HYDEC 1070 (1370)

Chemical Composition

	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Others Each/Total
Min.	99.70								
Max.		0.08	0.23	0.01	0.004	0.01	0.004	0.02	0.03/0.05

Mechanical Properties

Temper	Thickness [mm]	Yield Strength Rp0.2 [MPa]		Tensile Strength Rm [MPa]			Elongation A50 [%]		Hardness Brinell 1)		Bend Radius 180 1)		Electrical Conductivity % IACS	
		min	typ	min	max	typ	min	typ	min	typ	min	typ	min	typ
O	0.30-0.50	15	25	60	90	65	23		19		0 t			
	0.51-1.50	15	25	60	90	65	25		19		0 t		62.7	
	1.51-2.50	15	25	60	90	65	29		19		0 t			
H12	0.30-0.50	55	90	80	120	95	3		28		0.5 t			
	0.51-1.50	55	90	80	120	95	3		28		0.5 t		62.6	
	1.51-2.50	55	90	80	120	95	5		28		0.5 t			
H14	0.30-0.50	70	95	100	140	105	2		32		0.5 t			
	0.51-1.50	70	95	100	140	105	3		32		0.5 t		62.5	
	1.51-2.50	70	95	100	140	105	4		32		1.0 t			
H16	0.30-0.50	90	105	110	150	115	2		34		1.0 t			
	0.51-1.50	90	105	110	150	115	2		34		1.0 t		62.3	
	1.51-2.50	90	105	110	150	115	3		34		1.0 t			
H18	0.30-0.50	105	115	125		130	1		36					
	0.51-1.50	105	115	125		130	2		36				62.0	
	1.51-2.50	105	115	125		130	2		36					
H19	0.30-0.50	115	175	135		190	1							
	0.51-1.50	115	160	135		175	1							
	1.51-2.50	115	145	135		155	2							

1) For information only
This alloy is for electro-technical applications only

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HYDRO

HYDEC 1070

Technical Specifications:

Product Range:

Thickness 0.30 - 2.50 mm
Width 25 - 1500 mm

Please note that some combinations of the above width and thickness are not available.

$t < 0.30$ and $t > 2.50$ on special request.

Dimensions:

Dimensional tolerances according to EN 485-4. Closer tolerances available on request.

Edge Deburring Range:

Thickness 0.40 - 2.50 mm
Width 300 - 1500 mm

Other dimensions can be deburred on special request.

Protection:

Possibility for paper-interleaving and papercore.

Thickness 0.40 - 2.50 mm
Width 300 - 1500 mm
Other dimensions upon request.

Papercore Internal Diameter:

Ø248, Ø299, Ø397, Ø497, Ø597
For narrow strips, aluminium core on special request Ø300

Surface Finish:

The strip has a smooth surface, free from scratches and impurities.
In accordance with EN 14121

Electrical Conductivity:

Transformer windings made of Hydec 1070 in annealed condition is guaranteed to be better than 62.7 % IACS with a typical value of 63.0% IACS.

63% IACS equals to a resistance of $0.02737 \Omega\text{mm}^2/\text{m}$ or a conductivity of 36.54 MS/m

Certification:

Work certification supplied with all deliveries in accordance with EN 10204-3.1.

Karmøy Rolling Mill is certified in accordance with ISO9001 and ISO14001

		Outside Diameter (OD)					
		Build Up	1	2	3	4	5
		kg/mm Al	4.80	2.40	1.60	1.20	0.96
Internal Diameter (ID)	250	OD Min		979	812	714	649
		Nominal OD		1087	899	789	714
		OD Max		1186	979	857	774
	300	OD min		993	829	733	669
		Nominal OD		1100	914	806	733
		OD Max		1197	993	873	792
	400	OD Min	1397	1027	870	780	720
		Nominal OD	1549	1131	952	848	780
		OD Max	1687	1226	1027	912	835
	500	OD Min	1429	1070	920	835	780
		Nominal OD	1578	1170	998	900	835
		OD Max	1714	1262	1070	960	887
	600	OD Min	1467	1120	978	899	847
		Nominal OD	1612	1216	1052	959	899
		OD Max	1745	1305	1120	1016	947

Based on a theoretical density of aluminium at $2,73 \text{ g/cm}^3$ and a weight tolerance: $\pm 20\%$ without any interleave or core!

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HYDRO

HYDEC 1070

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● Sao Paulo (BR)

● Karmøy Rolling Mill
● Sales Offices



HYDRO

HYDEC 1070

New innovation: «Off line» Burr Height Measurement

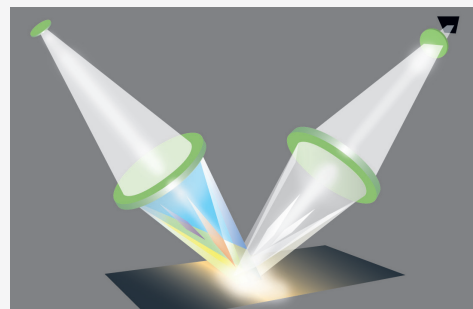
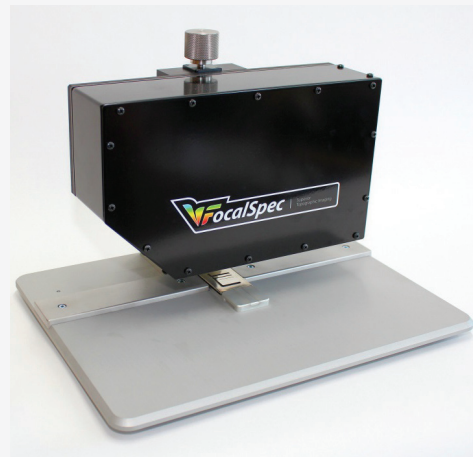
Burr height is one of the most critical parameters for Trafo customers. Historically Burr Height Measurement has been carried out manually. To make sure that the product quality is developing in the right direction, we have implemented what is known as Electronic Burr Height Measurement.

For the first time, we are now able to provide reliable data for Burr Height to our customers.

The measurement head contains a light source that projects an illumination pattern divided into spectra in the direction of the normal surface.

The illuminated area is imaged by a camera at a constant angle of 45°.

The light source is pulsed with short duration pulses and the entire texture and distance profile of 1200 points are measured with a single shot. This makes the measurement independent of the line speed.



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