Ferritic stainless steel advantages for thermal applications and renewable energies

What is ferritic stainless?

KARA is the Aperam brand for ferritic stainless solutions.

> Ferritic stainless steel contains at least 10.5% chromium (as other stainless steels) but does not contain nickel

> By choosing ferritic, you can avoid the erratic price fluctuations of the nickel and benefit of more price stability.

> Ferritic like other stainless steels continually protects itself thanks to a passive layer of chrome which forms naturally on the surface.

> Ferritic stainless is magnetic. There is no link between magnetism and corrosion, the proof being duplex grades (austeno-ferritic) which offer excellent corrosion resistance and which are also magnetic. Notons que le magnétisme est une propriété intéressante pour l'induction et le contrôle non destructif.

For welding and drawing, please refer systematically to our technical data sheets on the web site.

Ferritic stainless advantages

Corrosion Resistance

> Good corrosion resistance helps increase the longevity of the system and reduces maintenance costs.

Recyclability

> Stainless steel is the «green material» par excellence, infinitely recyclable, neutral in relation to the environment and when in contact with elements such as water, there is no leaching of elements which could alter their composition.

Expansion coefficient

> Ferritics have a low expansion coefficient, identical to that of glass. The advantage is less deformation of the structure or part.

Fire Resistance

> The melting point of ferritic stainless steel is up to ~ 1500°C, a temperature, which is significantly higher than those of other materials such as aluminium (660°C), zinc (419°C) and copper (1083°C). Giving off no toxic fumes and having good creep resistance.

Thermal conductivity

> Its low thermal conductivity coefficient gives this material good insulation properties avoiding heat loss especially on tubes (copper substitution).

Drinking water

> Stainless complies with all of the food-safe norms and can be used in contact with drinking water and domestic water.

Density

> Low density, lower than that of copper and enamelled steel and therefore lighter.

Oxidation Resistance

> Typically up to 950°C without scaling.

Proof stress and Youngs Modulus

> Enables thickness reduction (lighter) and to have good resistance to torsion, resistance to tearing and pressure.

Transformation

> Stainless steel can be drawn, folded and can be hydroformed but is also weldable, suitable for adhesive bonding and can be repaired.

For more technical information and to view some examples of applications, see the brochure « The ferritic solution » on the ISSF website (International Stainless Steel Forum) www.worldstainless.org

Applications

> Hot water tanks
> Condensing exchanger of boiler
> Boiler burner
> Chimney flue
> Absorber for solar captor et photovoltaïques
> Frame and housing for photovoltaic solar captor
> Fixing structure, accessories
> Hot water pump
> Fuel cells
> Micro generation
> Wind energy
> Biomass
> Solar and photovoltaic plant

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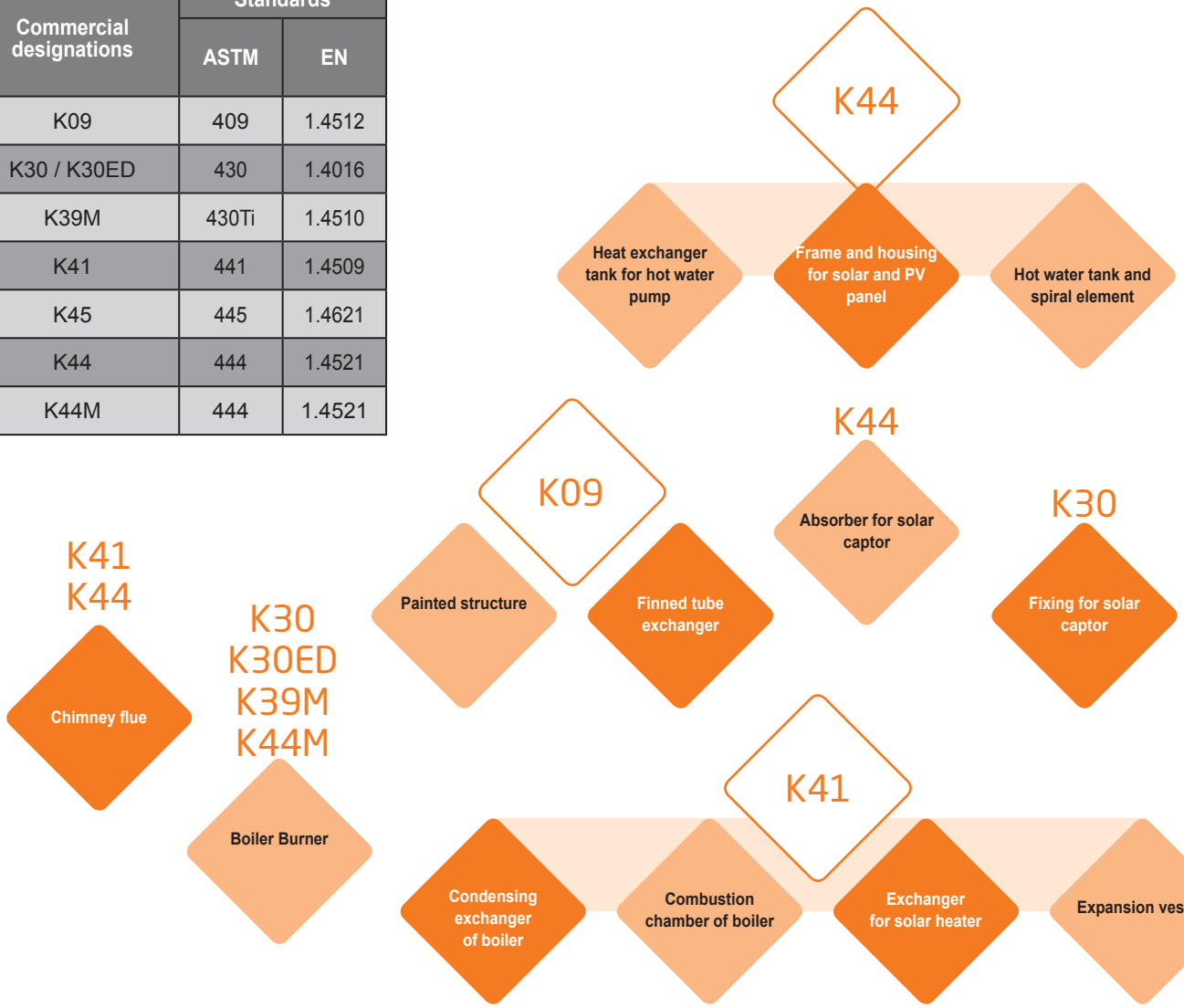
The KARA offer by application

Commercial designations	Standards	
	ASTM	EN
K09	409	1.4512
K30 / K30ED	430	1.4016
K39M	430Ti	1.4510
K41	441	1.4509
K45	445	1.4621
K44	444	1.4521
K44M	444	1.4521



Information
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