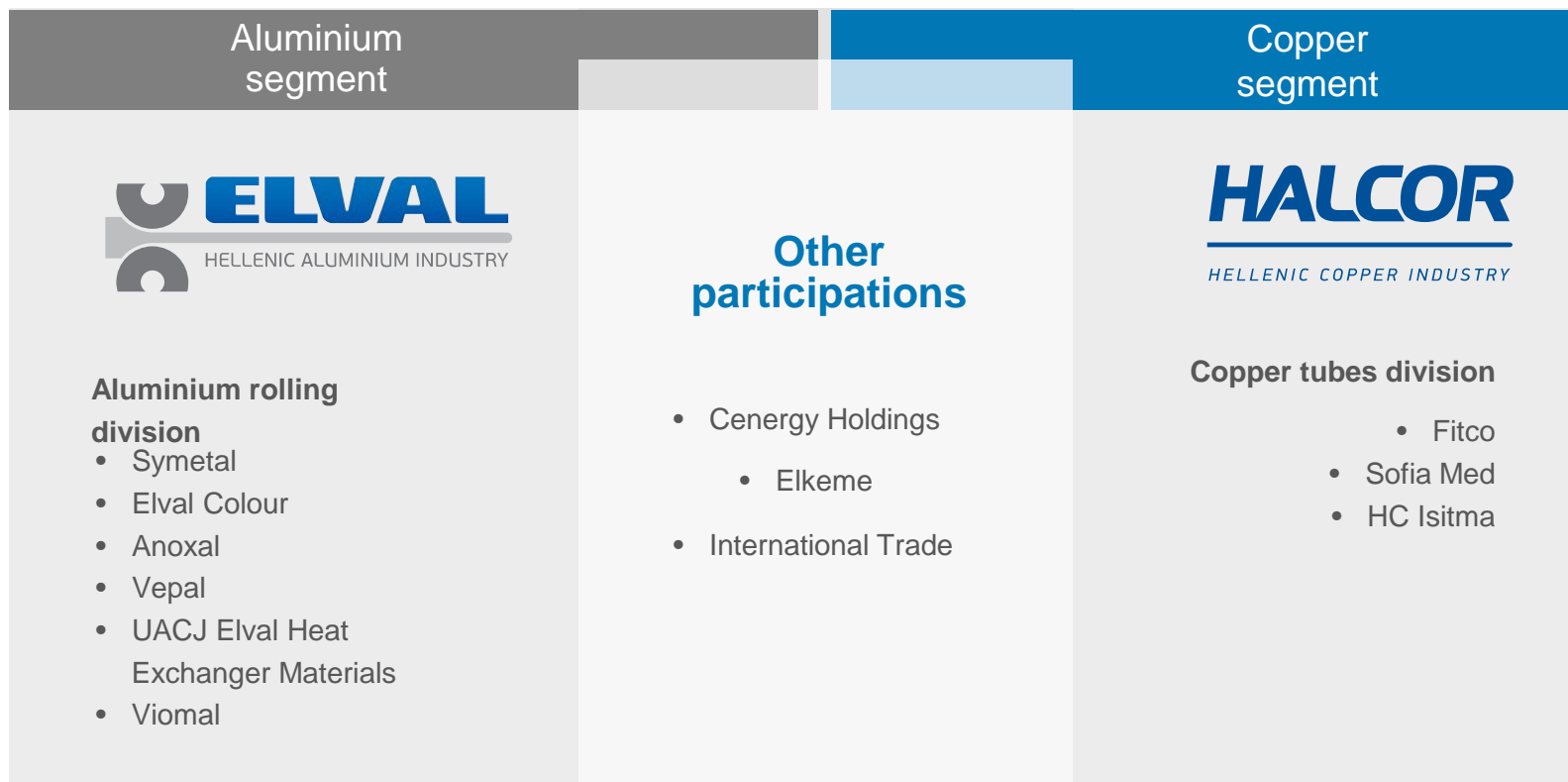


**ELVALHALCOR**

HELLENIC COPPER AND ALUMINIUM INDUSTRY S.A.

Corporate presentation



# Growth drivers



Efficiency



Change of energy sources



Increase  
Renewable  
natural gas



Decrease  
Coal / Oil



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Lighter products

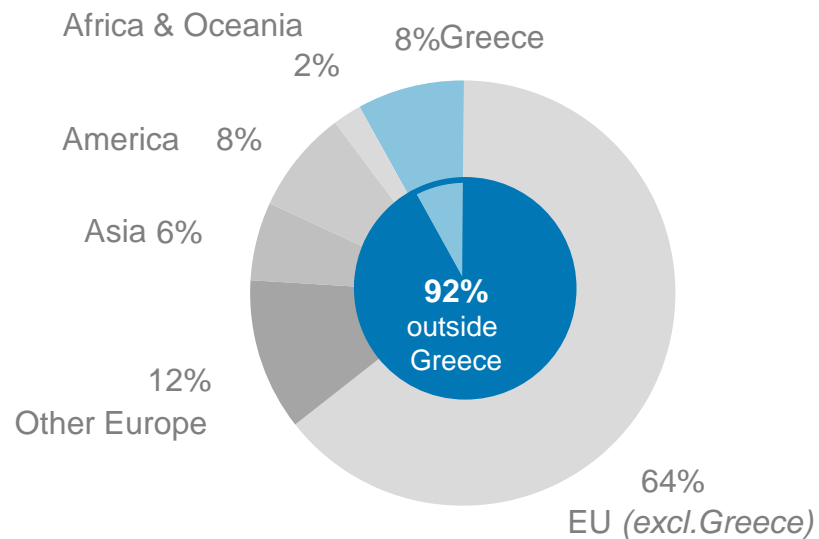


Aluminium  
Strong momentum  
for aluminium  
products

Electric cars  
Strong momentum  
for copper used for  
electricity / energy  
transportation

By geographical segment  
(FY 2016)

(in values)

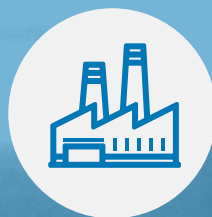
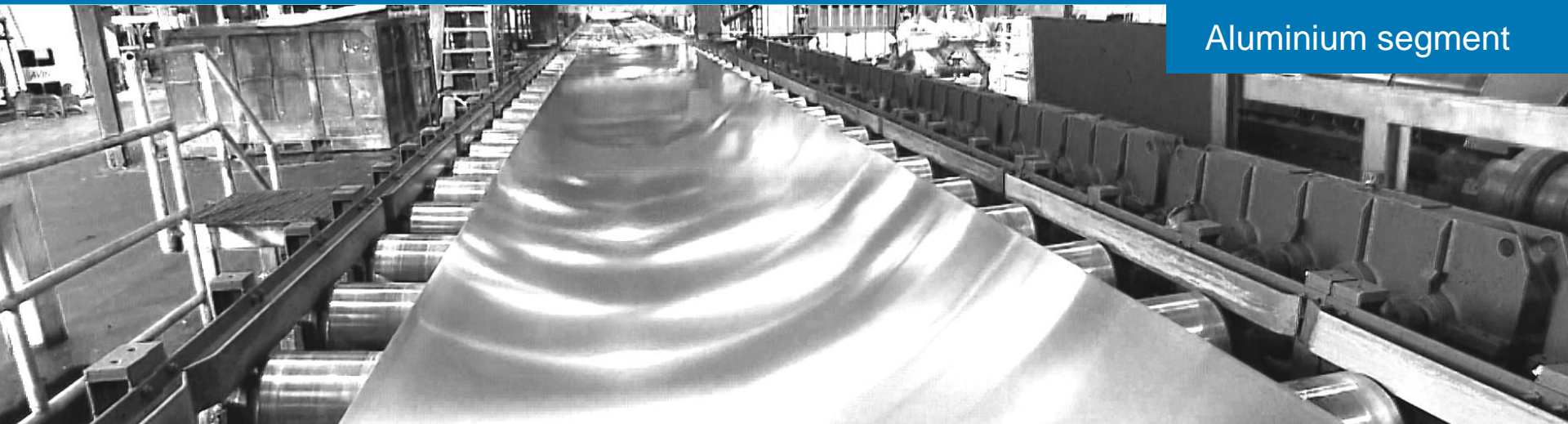


Sales in 102 countries



Aluminium segment

## Aluminium segment



With state-of-the-art production facilities in Greece and a dynamic commercial presence across all key geographies, the aluminium segment is well positioned in the global aluminium industry.

The aluminium segment comprises, the aluminium rolling division, under the Elval brand name and the aluminium processing subsidiaries Symetal, Elval Colour, Vepal, Anoxal and Viomal. It operates 7 plants in Greece, with an annual production capacity exceeding 270,000 tons.

Significant international presence - more than 85% of turnover in sales abroad - promoting its portfolio of products in more than 80 countries.

During the last ten years over EUR 350 mil. have been invested in equipment and R&D for capacity expansion and continuous improvement of quality.

## Competitive advantages



1

Production capability for wide coils (up to 2.5 m) and long slabs (8m).



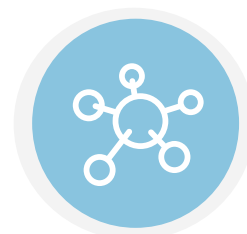
2

Medium size – flexible independent supplier.



3

Upgraded / state-of-the-art key equipment – Emphasis on R&D. Quality compatible with the highest market standards.



4

Extensive distribution network.



5

Strategic alliance with UACJ Corp.

## Production facilities

### Aluminium rolling



Oinofyta  
Greece



Flat rolled aluminium products and solutions for use in several markets including:

- Sea, road and rail transportation
- Packaging
- Building and construction
- Energy
- Cookware
- HVAC

Capacity: 270,000 tons/year

### Aluminium foil rolling



Oinofyta  
Greece



Foil for:

- Flexible packaging
- Pharmaceutical packaging
- Technical applications semi rigid packaging
- Tea lights
- Household aluminium foil semi, etc.

Capacity: 52,000 tons/year of aluminium foil rolling

### Aluminium foil converting



Mandra  
Greece



Foil for:

- Pharmaceutical packaging
- Flexible packaging
- Cigarette inner liners
- Lidding
- Confectionery, etc.

Capacity: 26,000 tons/year of foil converting



## Production facilities

### Composite panels



St. Thomas  
Greece



Solutions for a complete range of coated aluminium products used in the building envelope:

- Etalbond® aluminium composite panels
- Elval ENF™ coated aluminium sheets and Ydoral®
- Orofe® coated strips for rain gutters and roofing applications
- Functional coating systems Agraphon® and Arypon®
- Coated aluminium strips for rolling shutters.

### Aluminium rolling shutters



Nea Artaki  
Greece



- Aluminium rolling shutters and doors
- Insect screens
- Spacer bars
- Protection systems
- Home automation
- Powder coating.

### Aluminium coil coating



Thiva  
Greece



Aluminium coil and strips coating for architectural use.

## Aluminium - rolled products/markets

### Packaging



- Beverage cans
- Food containers
- Closure caps
- Flexible packaging
- Household foil



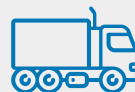
### Shipbuilding



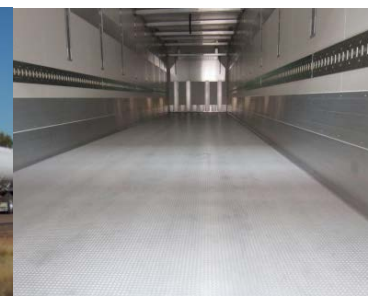
- Patrol vessels
- Catamarans
- Yachts
- Ferries



### Commercial Transportation



- Tipper trucks
- Road tankers/silos
- Refrigerator trucks
- Cargo rail wagons
- Buses

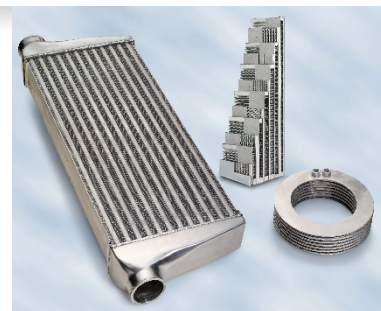


## Aluminium - rolled products/markets

### Automotive industry



- Internal parts/heat shields
- Heat exchangers
- Air pressure vessels/ Fuel tanks
- Suspension and brake systems
- Coated aluminium sheets and strips for automotive applications
- Aluminium composite panels etalbond for automotive applications



### Industrial applications



- Lamp base/transformers
- Renewable energy
- Multi-layer tubes
- Bus ducts



### Domestic applications



- Cookware
- White goods

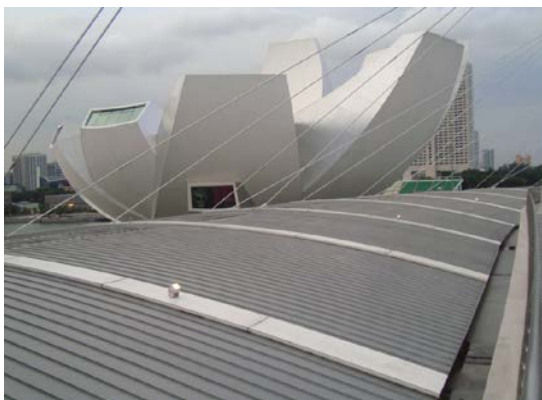
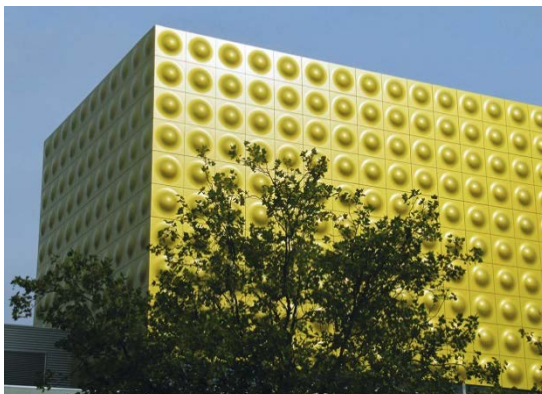


## Aluminium - rolled products/markets

### Building & Construction



- Façades
- Roofing
- Rain gutters
- False ceilings
- Roller shutters
- Functional coatings
- Flashings



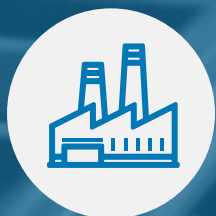
**HALCOR**

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*HELLENIC COPPER INDUSTRY*

 Copper segment

## Copper segment



Versatile and dynamic copper solutions through its copper tubes division, under the brand name Halcor, and its copper processing subsidiaries, Fitco (Greece) and Sofia Med (Bulgaria).

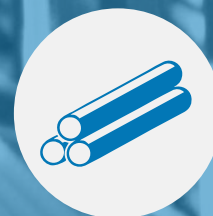
Halcor's copper tube plant is the most efficient plant in Europe and the biggest in EMEA region. It has also one of the three biggest extrusion presses worldwide.



Leader in Europe in copper tubes. Dynamically growing market presence in other products.



Considerable part of Greek exports. Halcor is a leader in the European copper tubes market and its products are sold in more than 58 countries around the world.



Wide range of products and capable to meet demanding customers' specifications.



Strong input in:

- HVAC&R industry
- Electrical industry
- Production engineering

## Competitive advantages



1

Biggest and most efficient plant in EMEA



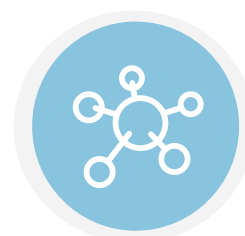
2

State of the art manufacturing equipment and quality procedures



3

Sophisticated technological support through the innovative Tube Heat Transfer Laboratory



4

Extensive distribution network.



5

Established presence in HVAC industry

## Production facilities

### Copper tubes



Oinofyta  
Greece

**HALCOR**

2 plants in Greece

Copper tube plant producing:

- Copper tubes with or without plastic coating or industrial insulation

Capacity: **75,000 tons/year**

### Copper tubes



Oinofyta  
Greece

**HALCOR**

2 plants in Greece

Foundry producing:

- Copper billets and slabs
- Copper alloy billets

Capacity: **235,000 tons/year**



## Production facilities

### Copper alloy bars, tubes and wires



Oinofyta  
Greece



1 plant in Greece

Specialises in the production of extruded copper alloy:

- Rods
- Tubes
- Sections
- Wires and mesh
- Antimicrobial copper Cu+

Capacity: **40,000 tons/year**

### Copper and brass



Sofia  
Bulgaria



Specialises in the production of rolled and extruded copper and copper alloy products such as sheets, strips, plates, circles, disks, bare and plated bus bars, rods, profiles, components and wire.

Capacity: **100,000 tons/year**

### Copper tubes



Gebze  
Turkey



Specialises in the production:

- Ecutherm polypropylene preinsulated copper tube coils
- Polypropylene corrugated A/C drain hose

Capacity: **4,200,000 tons/year**  
ecutherm copper tubes

Capacity: **1,800,000 tons/year**  
corrugated A/C drain hose

## Copper tubes

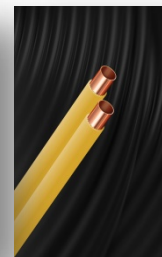
Copper tubes bare, pre-insulated or inner grooved from 4 up to 108 mm for:



### Building & Construction



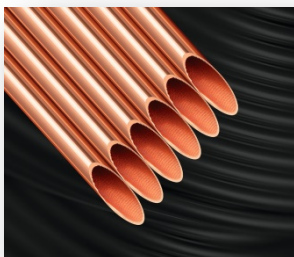
Water supply and Heating networks  
Under floor heating and cooling  
Air-conditioning  
Refrigeration  
Natural gas  
Medical gas distribution networks  
Fire extinguishing networks



### HVAC&R



Air-conditioning  
Refrigeration  
Heat exchangers



## Copper tubes

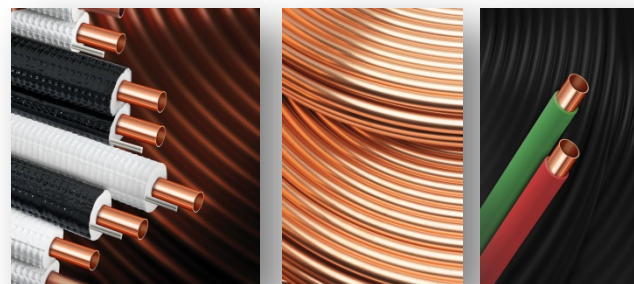
Copper tubes bare, pre-insulated or inner grooved from 4 up to 108 mm for:



### Renewable Energy



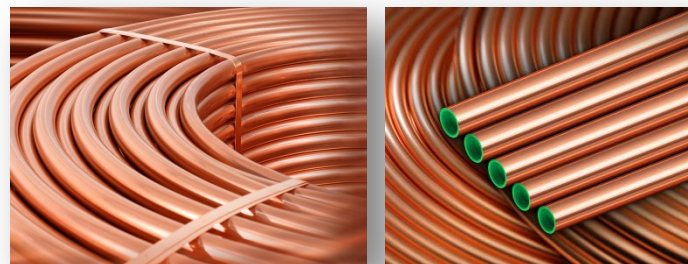
Solar panels  
Solar system networks  
Geothermal heating & cooling



### Industrial Applications



Fittings  
High frequency cables  
Boilers  
Filters  
Various industrial applications



## Innovative products - Cusmart®

Copper tubes for:

- Water supply
- Heating (pre-insulated with PE-X)
- Under floor heating

Cusmart® provides a complete system along with a wide range of Compression and Press fittings.

Due to combination of high quality plastics with lower wall thickness copper tubes, the replacement cost per ton is lower compared to the cost of a pure copper product.

Meets the requirements and are certified according to DVGW Vp 652, ELOT 1425/ 1426 and NSF/ANSI 61.



**CUSMART®**

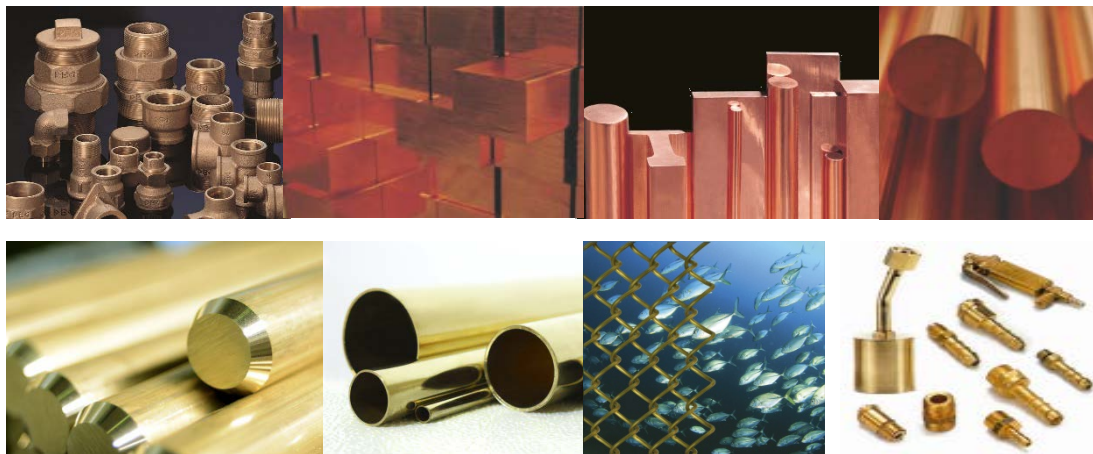
## Products and main applications

### Extruded Products



Copper alloy and brass rods, bars, sections, tubes, flats, wires for: Construction, decoration, electrical engineering (electronic control panels, valves, batteries etc.), supports for gutters.

Produced by Fitco and Sofia Med

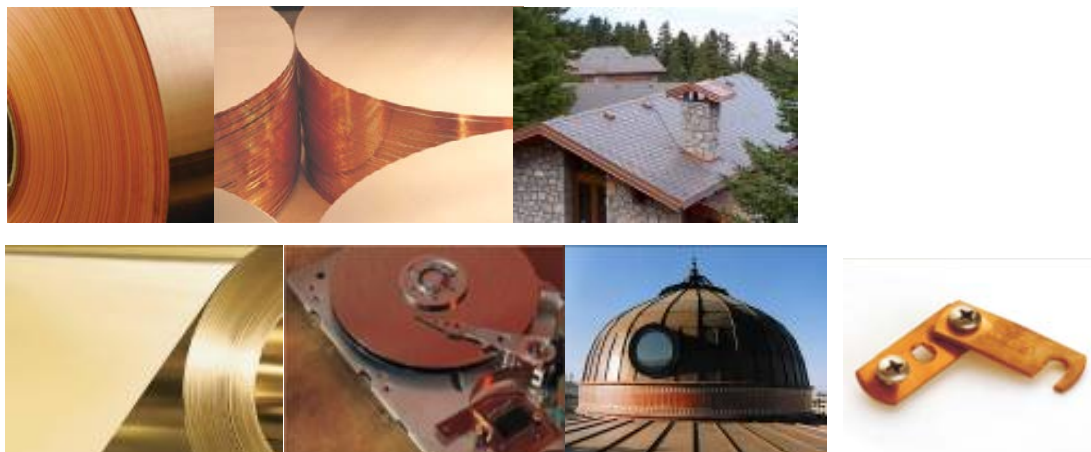


### Rolled Products



Copper and brass and HP alloys in sheets, strips, plates for: Construction (roofing, gutters), electrical engineering (connectors, transformers, boilers, etc.), decoration.

Produced by Sofia Med





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