

# www.kandil.com

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# Kandil Steel

Company Profile



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# CHAIRMAN MESSAGE

company. This team will follow the most important path to creativity and novelty which is:

# A Knowing our Clients".

Our sales, marketing, R&D, quality, supply chain, production and finance teams, will indulge in our customer business and jointly analyze their processes, products and market conditions, trying to come up with solutions and ideas that will help our client compete, succeed and prosper. Such solutions maybe in making: new product, customizing specifications & developing more efficient logistical system. We will study the entire relationship in order to attain the lead and the formula that will flourish our mutual success. We wish our effort and determination to assist, support, and serve our clients will help them; reduce cost, push productivity, improve efficiency, create new products and eventually be their own market leaders.

Regards,

Chairman Signature: Amr/kandil

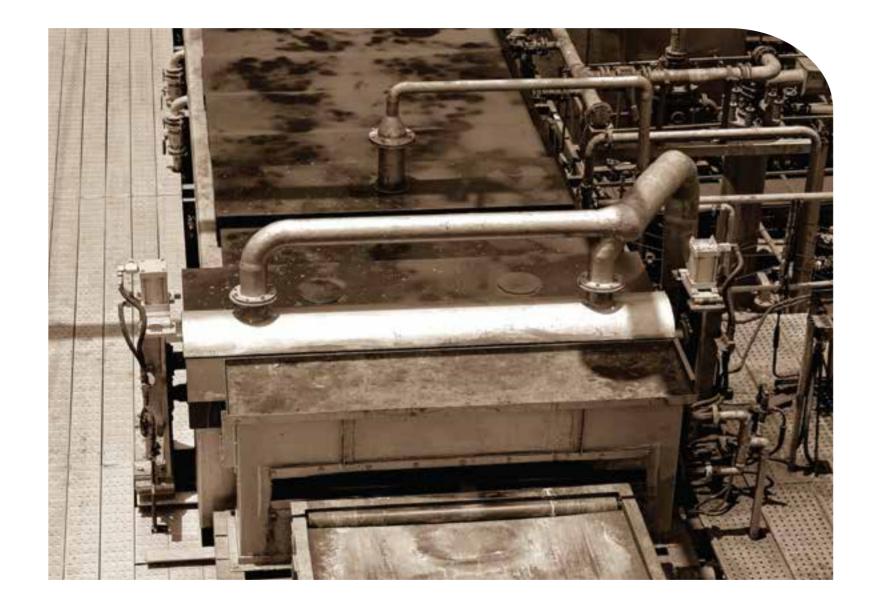


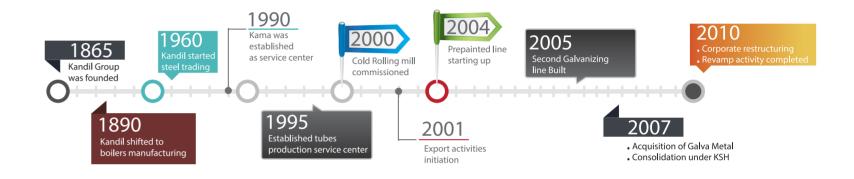
Our world is changing quickly and dramatically! How can steel companies survive such a severe and rough era if they don't start doing things differently? Kandil with all its history and legacy started the process of re-inventing itself as a modern, flexible, dynamic and responsive company that will put Innovation as its main drive for the future. Innovation in such a conservative **business where any new idea** or change in product or production process may seem guite challenging.

The real mission is to help our people to understand the need for transformation and development and motivate them to pursue such a dream of creating an innovative flat steel









# OUR HISTORY

Kandil opened its doors to the market since 1865, starting by manufacturing manual agricultural machinery which later on were changed to semi-automatic ones, then on to boilers in the early 1900's. Passing through several phases, Kandil finally focused on flat steel in the 1950s after Mr. Mohy Kandil finished Economics degree in France and then became a genuine steel player in building the Egyptian industries.





He started trading in flat steel, initiating a small workshop for processing steel sheets while concentrating mainly on prime quality material which gave the family a strong presence and reputation in the Egyptian Market.

In the early 1980's, the family started the first modern flat steel service center KAMA in 10th of Ramadan city. Maintaining quality and reliability together with investing in modern western production lines established the brand as the leader in supply of flat steel for all manufacturing and construction sectors.

By the year 2000 Kandil Steel initiated the first privately owned cold rolling mill in Egypt followed by its first Galvanizing line in the year 2003. And since then, Kandil kept investing in a new production line every year till it acquired its main competitor Galvametal in the year 2007.

Kandil built its name as a reliable Cold Rolled, Galvanized & Coated flat steel supplier, in both the European and Middle Eastern markets. The company's current production capacity is about 600,000 tons/Year, almost 40% of which are dedicated to export.



our Vision

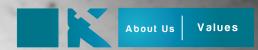
# our Mission



Bring to the world a different approach in flat steel supply, inspired by a true understanding of our clients' markets, resulting in value products customization that will promote ultimate mutual success.

Kandil Steel is striving to produce steel products that are differently developed to ensure customer satisfaction, through continuously attempting to better understand the market, optimize mutual success, by sustaining our core competencies of internal processes efficiency and investing in developing our employees who always aim in pursuing collaborative efforts, constant dedication, perseverance and integrity in doing business.





# Our Values

In every walk of life, people have different passions, goals, ambitions and ideologies. Success is achievable, through persistence, and sustaining values which is what we highly preach and enforce at Kandil. There are 5 main characteristically explored values that we endorse which are:

# Integrity

Customer Oriented Team Work Creativity Daring

# **OUR Facilities**

# Kandil Steel incorporation is the holding company for two facilities;

# KAMA Coating and Manufacturing (10th of Ramadan city – Egypt):

# **Our Facilities**

Its activities is producing Pickled & Oiled, Cold-Rolled, Galvanized and Pre-Painted Steel.

# Galvametal (Obour city – Egypt):

Its activities is producing Pickled & Oiled, Cold-Rolled and Galvanized Steel.

# Kama for Manufaturing (10th of Ramadan city – Egypt):

Service center for producing all flat steel coils, tubing, downstream manufacturing.



# COLD ROLLED STEEL

Products CR

## Product Features:

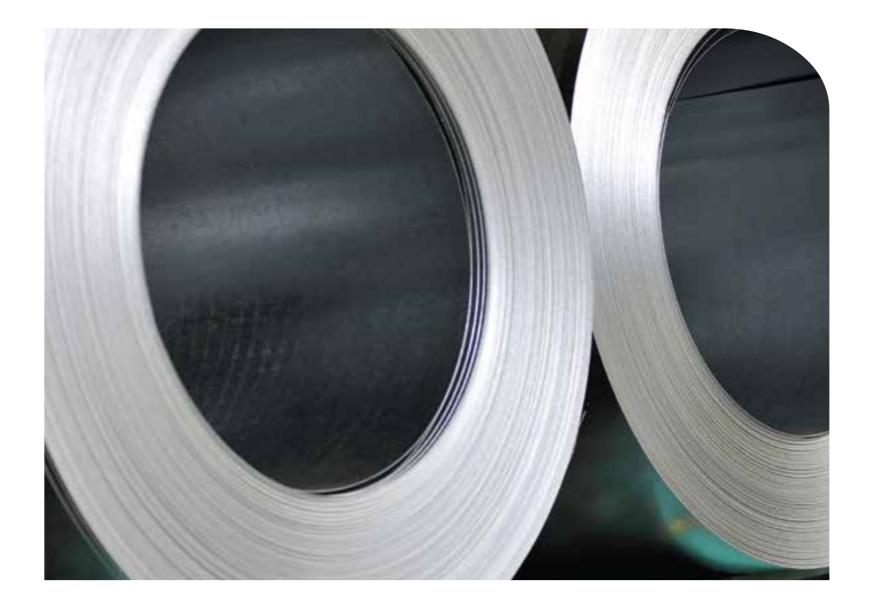
- 1- Outstanding Surface Quality and High Dimensional Accuracy.
- 2- Suitability for Metallic Coating.

3-Weldability: Cold Rolled Steels can be joined using virtually any accepted

Cold-rolled steel sheets and Coils are used in manufacturing automotive body parts, home electrical appliances (ovens, washing machines, refrigerators etc.), air conditioning units, electrical panels , switchboards and metal furniture as well as a wide range of other products.



# Cold Rolled Steel





Home appliances



Utensils



Pipes





Electric blast panels



Car body



Computer case



Automotive parts



Metal furniture



Fuel tank

Motor & Stator



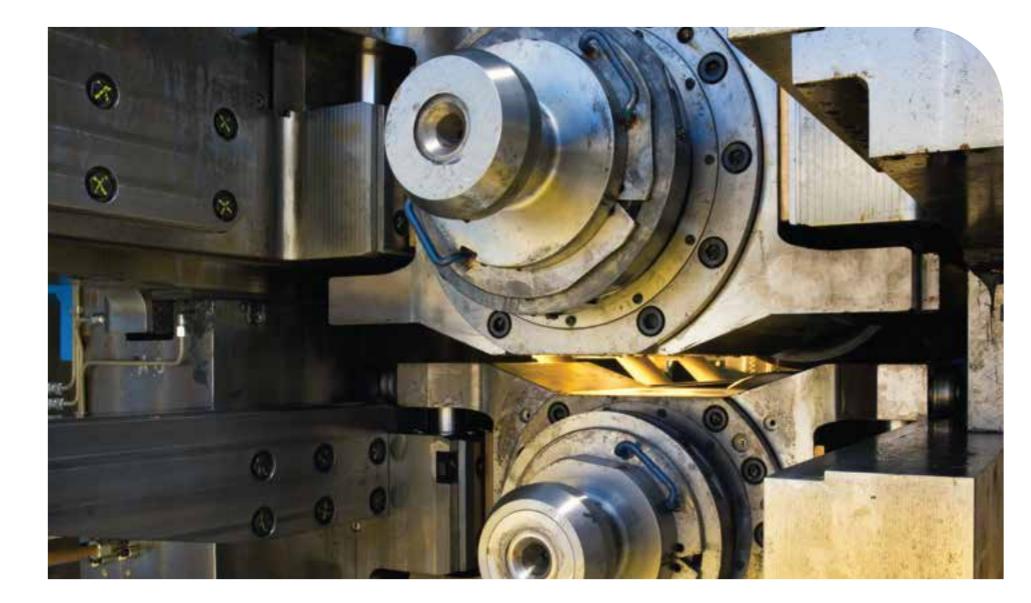




# CR Quality Specifications (Grades & Standard):

| Classification                   | Standards     |             |           |            |
|----------------------------------|---------------|-------------|-----------|------------|
| Classification                   | EN10130       | ASTM A 1008 | DIN 1623  | JIS G3141  |
| Commercial                       | DCO1          | CS (A366)   | St12      | SPCC       |
| Drawing                          | DCO3          | DS (A619)   | St13      | SPCD       |
| Deep Drawing                     | DCO4          | DDS (A620)  | St14      | SPCE       |
| Enhanced Deep Drawing            | DCO5          |             |           | SPCF       |
| Extra Deep Drawing (non aging)   | DCO6          | EDDS        |           | SPCG       |
| Classification                   | EN10025       | ASTM A1008  | DIN 17100 | JIS G 3101 |
| Commercial                       | S235/S235JR   | Grade 33    | ST37      | SS330      |
| Medium Strength                  | S275          | Grade 40    | ST44      | SS400      |
| High Strength                    | S355JR/S355JO | Grade 50    | ST52      | SS540      |
|                                  | EN10025-5     |             |           | JIS G 3125 |
| Corten Steel (Weathering steel)  | S355JOW       |             |           | SPA-C      |
| Classification                   | EN10168       | ASTM 1008   |           |            |
| High Strength low Alloy (HSLA)** | HC420LA       | Grade 60    |           |            |
| Classification                   | EN10209       | ASTM A424   | DIN1623-3 | JIS G 3133 |
| Drawing                          | DCO1EK        | Туре-І      | EK2       | VE02       |
| Deep Drawing                     | DCO4EK        | Туре-II     | EK4       | VE04       |
| Extra Deep Drawing               | DCO6EK        |             |           |            |
| Classification                   | EN10129       |             |           |            |
| •CRNGO Semi processed            | M1050-50D     |             |           |            |
| •CRNGO Semi processed            | M1000-65D     |             |           |            |

\*\* Other grades of low alloy steels may be produced upon customer request.



Cold Rolled Coils

Thickness (mm)

Width (mm)

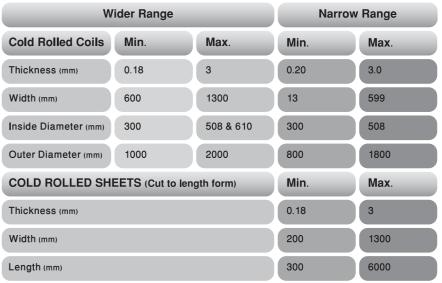
Thickness (mm)

Width (mm)

Length (mm)



# Dimensions & Sizes Range of CR Products:



\*\* Tolerances are according to Euro Norm, unless stated by the customer.

# Cold Rolled Black Annealed

Products CRBA

# Cold Rolled Black Annealed Also known as Blue Steel



## Black Annealed Properties:

Cold Rolled Black Annealed (CRBA) also known as Blue Steel is cold rolled sheets that have been oxidised by annealing in a special installation to produce a very thin magnetite layer (Fe<sub>3</sub>0<sub>4</sub>) on the surface (less than 1 µm thick) for more protection. Advantages:

Cold Rolled Black Annealed provide protection against corrosion for parts whose surface cannot be protected by normal painting or any metallic coating processes. The magnetite layer can withstand moderate bending and drawing operations. The sheet surface is very clean and retains its attractive appearance during storage. Standards:

According EN 10130 & EN 10131 and As per Customer Requirement. Applications:

The main areas of use are:

- All kinds of Steel pipes and tubes (Stove pipes)
- · Food contact other than packaging
- Cake and biscuit moulds
- Baking trays
- Lining of industrial bread ovens
- Furniture & construction

· Economical general items where needn't require further painting. Cold Rolled Black Annealed are suitable for food contact, under certain conditions laid down in the Regulation (EC) No. 1935/2004 and the French standard NF A 36-714. Please contact us for further information on this subject Recommendations for use: The processing conditions for Cold Rolled Black Annealed are similar to those for cold forming. Corrosion resistance (salt spray test): Corrosion resistance is greater than that of uncoated cold rolled steel by about 6 times extra protection. 1 x CR : 6 x BS : 70 x GI Electro-plating: Could performing electro plating after scale layer removal through acidic solution process Electro-static painting: Cold Rolled Black Annealed is moderate performance of direct surface painting either normal or electro static Surface quality: Cold Rolled Black Annealed can be supplied with or without oil film.

## CHEMICAL COMPOSITION (%)

| Element             | Abbreviation | %C       |
|---------------------|--------------|----------|
| CRBA Full Hard (FH) | CRBAFH       | 0.17 max |
| CRBA Half hard (HH) | CRBAHH       | 0.17 max |
| CRBA 1/4 Hard (QH)  | CRBAQH       | 0.12 max |
| CRBA Soft (SF)      | CRBASF       | 0.12 max |

# FABRICATION PERFORMANCE

| 1 = Limited 5 =     | 1 = Limited 5 = Excellent and NR= not recommended |          |         |
|---------------------|---|----------|---------|
| Quality             | Drawing   | Pressing | Bending |
| CRBA Full Hard (FH) | NR  | 4        | 1       |
| CRBA Half hard (HH) | NR  | 4        | 2       |
| CRBA 1/4 Hard (QH)  | 4   | 3        | 4       |
| CRBA Soft (SF)      | 5   | 3        | 5       |

# PRODUCT GRADES AND DIMENSIONS

| Steel Grade<br>of Cold Rolled |        |               | Dimensions (mm) |           |           |
|-------------------------------|--------|---------------|-----------------|-----------|-----------|
| Black Annealed                |        | Min Thickness | Max Thickness   | Min Width | Max Width |
| CRBA Full Hard (FH)           | CRBAFH | 0.35          | 1.5             | 600       | 1250      |
| CRBA Half hard (HH)           | СКВАНН | 0.35          | 1.5             | 600       | 1250      |
| CRBA 1/4 Hard (QH)            | CRBAQH | 0.35          | 1.3             | 600       | 1250      |
| CRBA Soft (SF)                | CRBASF | 0.35          | 1.3             | 600       | 1250      |

# MECHANICAL PROPERTIES

| Product type        | Hardness (HRB) |
|---------------------|----------------|
| CRBA Full Hard (FH) | 85 and over    |
| CRBA Half hard (HH) | 75 to 84       |
| CRBA 1/4 Hard (QH)  | 65 to 74       |
| CRBA Soft (SF)      | 50 to 64       |

# SURFACE FINISH

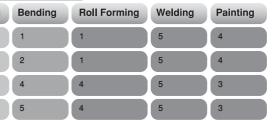
| Matt finish with different colors: |  |  |  |
|------------------------------------|--|--|--|
| Color ERP Code                     |  |  |  |
| Dark Grey G                        |  |  |  |

| Dark Grey    | G |  |
|--------------|---|--|
| Black        | В |  |
| Grayish Blue | S |  |
| Black TOC    | К |  |

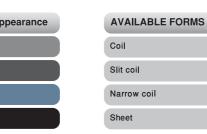












# GALVANIZED STE

Galvanized Steel



## Product Features:

- 1- Corrosion Resistance to the Atmosphere.
- 2- Formability: excellent zinc adherence and flake resistance due to the thin Fe-Zn layer.
- 3- Paintability: Galvanized steel is suitable for coating and producing pre-painted steel, and electrostatic paint.

## Application Fields:

- Galvanized Steel is used in industry to protect against corrosion.
- 1- Hot-Dip Galvanized Steel For Forming: Ex. Home appliances, and air conditions.
- 2- Hot-Dip Galvanized Steel for Structural Applications: Guaranteed minimum strength.



Designation & Steel Grade

Low Carbon Steel For Cold Forming

Designation & Steel Grade

Structural Steel



# Grades & Standards of Galvanized Steel:

| EN 10346-2009,<br>EN 10327-2004,<br>EN 10142-2000 | DIN 17162     | ASTM A653 | JIS G3302 |
|---|---------------|-----------|-----------|
| DX51D+ Z  | St 02Z        | CS        | SGCH      |
| DX52D+ Z  | St 03Z,St 04Z | FS        |           |
| DX53D+ Z  | St 05Z        | DDS       |           |
| DX54D+ Z  | St 06Z        |           | SGCD1     |

| EN 10346-2009,<br>EN 10326-2004,<br>EN 10147-1995 | DIN 17162   | ASTM A653         | JIS G3302     |
|---|-------------|-------------------|---------------|
| S220GD+Z  | St E220-2Z  | SS Grade 230 (33) | SGCC,SGHC     |
| S250GD+Z  | St E250-2Z  | SS Grade 255 (37) | SGC340,SGH340 |
| S280GD+Z  | St E280-2Z  | SS Grade 275 (40) | SGC400,SGH400 |
| S320GD+Z  | St E320-2Z  |                   | SGC440,SGH440 |
| S350GD+Z  | St E 350-2Z | SS Grade 340 (50) | SGH490,SGC490 |
| S550GD+Z  |             | SS Grade 550 (80) | SGC570        |



Galvanized Coils

Thickness (mm)

Width (mm)

Outer Diameter (mm)

Thickness (mm)

Width (mm)

Length (mm)

\*\* Tolerances are according to Euro norm, unless stated by the customer.

Surface Finish Spangle Type:

Surface Quality: - Coated Surface (A) - Improved Surface (B)



# **Dimensions & Sizes Range of Galvanized Products:**



- Normal Spangle: Spangle visually appears with normal size.
- Minimized Spangle : Spangle appears with reduced size, sometimes not visible. - Zero Spangle: Spangle is not visible.

- As per the EN 10346 Standard the following types of surfaces are achievable:

# Surface Treatment:

- Chromate
- Oil
- Thin Organic coating (colored/ colorless)
- 1. More corrosion resistance
- 2. Anti-finger print quality (AFP)
- 3. Excellent post paint ability
- 4. Adhesion to PU foams
- 5. High lubricity for formability

# PRE-PAINTED

0)





# Products PPGI

# Pre-Painted

Kandil Pre-Painted steel products are used in all sectors of industry. In building and construction, profiles are used for wall cladding and roofing, and also for applications such as suspended ceilings, lighting etc. In general industry, these products have a variety of applications, including metal furniture, HVAC (Heating, Ventilating, Air Conditioning) and many others. Brown goods (casings for Hi-Fi, VCR, DVD, electronic and computer equipment) are another successful field of application for Pre-Painted steel products. This variety of uses is a result of three key material properties strength, good formability and flexible surface design.





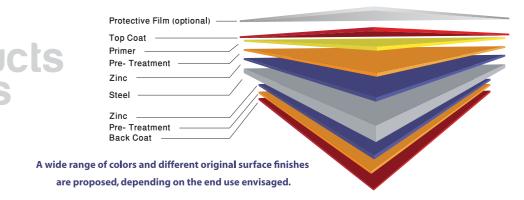
# Kandil products specs

Kandil pre-painted steel products are multi-talented materials that meet end-user requirements and needs. We design the surface properties and colours to come across very specific technical and aesthetic requirements. It is served with various paints that are applied to a metallic substrate as a part of a continuous process, which ensures optimum adhesion of the coating and improved corrosion resistance of the underlying steel substrate.

In pre-painted steel, the substrate is usually galvanized steel. The choice of the paint system depends on the environmental conditions to which the product will be exposed and the technical properties required. Kandil pre-painted steel products are available in a rich diversity of colors (a variety of color options are available) and surface appearances. Nevertheless, each product has its own specific properties and applications. The appropriate choice is therefore crucial and should be made in close collaboration with Kandil technical and sales teams.

Today, Pre-Painted Steel offers exceptional economic and technological advantages, which explain its extraordinary success story in industry.







# KANDIL SPECIAL COLORS & PAINT MIXING UNIT

# Kandil colors your imagination, just keep dreaming:

Kandil Group with much pride through its advanced paint mixing unit using the highest technology delivers its products with both standard and non-standard colors. The painting mixing unit is highly characterized with:

- Producing any non-standard color.
- Imitate any customer sample.
- Production of small batches in very short time. (Reduced delivery time).
- Create Special effect and customized colors.

• Once the customer offers his sample, the technical team of the mixing unit produces a master sample for approval with the customer. Then all data is saved and serves as a reference sample in a special file for future production if extension, updates or repairs are required either for top or back coat.

Special Effect Product



## Structured Clear Coat:

The product concept is based on a multi-layer system. This system is a combination of a structured transparent or colored clear over colored base coat.

This combination gives a lot of different and very nice aesthetic properties.

## **Properties:**

Exterior durability Excellent Surface hardness Excellent Excellent Scratch and abrasion resistance

## Wrinkle finish aspect:

This product, because of its highly matt aspect, is especially designed for roofing market. The flexible polyester matrix allows huge deformation compatible with tile profiles.

## **Properties:**

Exterior durability Excellent Deep mat under every angle. Surface hardness and abrasion resistance Excellent





# 1-Size Range

| Thickness      | Width        | Coil ID    | Coil Weight |
|----------------|--------------|------------|-------------|
| 0.30 to 0.8 mm | 600: 1250 mm | 508/610 mm | 2: 7 ton    |

# 2-Coating range

Kandil produces organic coated steel with costumed metallic coating thickness and paint thickness as tabled below

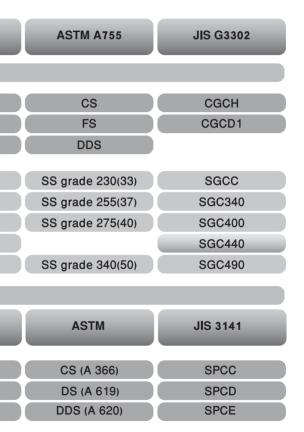
| Zine weight | Тор         | Top coat       |                |
|-------------|-------------|----------------|----------------|
| Zinc weight | Primer film | Top paint film | Back coat film |
| 80 →275 GSM | 3 - 7 μm    | 18 - 25 μm     | 5 - 15 µm      |

# 3-Substrate Steel Grade Range

| Substrate group      | EN 10346 |
|----------------------|----------|
| A- PP Galvanized Su  | bstrate  |
| Galvanized On        | DX51D+Z  |
| Coldrolled           | DX52D+Z  |
| Low Carbon Steel     | DX53D+Z  |
|                      |          |
| Galvanized On        | S220GD+Z |
| Coldrolled           | S250GD+Z |
| Structural Steel     | S280GD+Z |
|                      | S320GD+Z |
|                      | S350GD+Z |
|                      |          |
| B- PP Cold Rolled St | ubstrate |
| Substrate group      | EN 10130 |

| Cold Rolled Low<br>Carbon Steel | DCO1 |
|---------------------------------|------|
|                                 | DCO3 |
|                                 | DCO4 |
|                                 |      |







Products PPGI

# **Pre-Painted Products**

SUPER HIGH DURABLE
HIGH DURABLE
STANDARD PRODUCTS
INDOOR & HOME APPLIANCES USE

# SUPER HIGH DURABLE

This product range meet rigorous requirements of aesthetic quality, flexibility, surface strength, chemical and UV resistance etc.

The substrates used for these applications are galvanized skin passed steel to promote excellent corrosion resistance to the substrate the paint system contains supper high durable polyester/ PVDF for top coat with special primers to comply with the severe environment conditions.

Kandil offers these products in a wide range of standard and non standard colors.



# **TECHNICAL PROPERTIES**

## Property

Top coat (Dry thick.)

Primer (Dry thick.)

Back coat (Dry thick

Coating Formability (T-bend test)

Impact resistance

Pencil hardness

Gloss

Corrosion resistance Salt spray test

Resistance to acceler UV weathering (QUV-

| IICAL PROPERTIES |  |                      |   |  |  |
|------------------|--|----------------------|---|--|--|
|                  | Brief description  | Range                | Range 15 YEARS<br>WARRANTY                            |  |  |
| )                | High Durable Polyester top coat<br>/PVDF dry film  | 20 µm                | Products are in                                       |  |  |
|                  | Epoxy dry film under top/back coat   | 7 µm                 | compliance with<br>EN 10169 EN 13523-1                |  |  |
| k.)              | Polyester / PVDF back film   | 12 µm                | EN 10169 EN 13523-1                                   |  |  |
|                  | is determined by<br>the minimum bending radius at which no<br>cracks are visible on the coating  | \$ 2T                | ISO 1519<br>EN 13523-7                                |  |  |
|                  | the paint's resistance to cracking and/or<br>peel-off after rapid deformation of the<br>organic coated   | 15 Joule             | ISO 6272<br>EN 13523-5                                |  |  |
|                  | Is assessed by using a range of pencils<br>special method. The value is given by<br>the hardness of the last pencil that does<br>not scratch the paint surface.  | Min H                | ASTM D3363<br>EN 13523-4<br>ISO 15184                 |  |  |
|                  | The specular reflection (gloss) of the coil coated surface is measured using a gloss meter and usually at an angle of 60   | From 50 to 80        | EN 13523-2  |  |  |
| e                | Is evaluated by exposing a test specimen<br>to a salt fog at35°C for a given time.<br>Evaluation criteria after the exposure time:   | 1000 hours with Z200 | ISO 7253, ISO 4628-2<br>EN ISO 9227<br>EN 13523-8     |  |  |
| erated<br>/- A)  | UV weathering is evaluated by exposing<br>an organic coated sample to accelerated<br>weathering (UV, humidity and temperature)<br>for 2,000 hours<br>Evaluation is based on color change and<br>gloss retention. | RUV4                 | ISO 4892-3<br>EN 13523-10<br>ASTM D4587<br>EN 10169-2 |  |  |

"Warranty conditions are applied due to client's contract terms"

"تــطبـــق شــروط الـــــضمــان وفــق بــنــود الـعـــقــد مــع الــعــمــيــل"



# HIGH DURABLE

The substrates used for these applications are galvanized skin passed steel to promote optimum corrosion resistance to the substrate the coat layers contains high durable polyester for top coat with special primers to comply with the severe environment conditions.

Kandil offers these products in a wide range of standard and non standard colors. The technical properties are summarized in the table below.



# **TECHNICAL PROPERTIES**

Property

Top coat (Dry thick.)

Primer (Dry thick.)

Back coat (Dry thick

Coating Formability (T-bend test)

Impact resistance

Pencil hardness

Gloss

Corrosion resistance Salt spray test

Resistance to accele UV weathering (QUV

"Warranty conditions are applied due to client's contract terms" "تــطبـــق شــروط الـــــضمــان وفــق بــنــود العـــقــد مـع الــعــمـيــل"



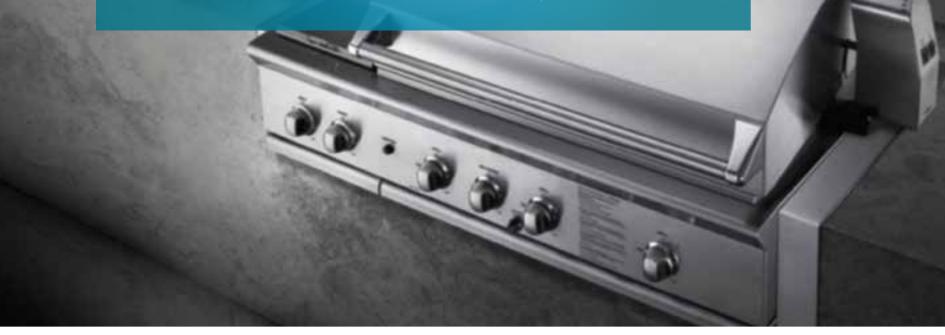
|                 | Brief description  | Range                | Range 10 YEARS<br>WARRANTY                            |  |
|-----------------|--|----------------------|---|--|
| )               | High durable Polyester top coat dry film   | 20 µm                | Products are in                                       |  |
|                 | Epoxy dry film under top/back coat   | 7 µm                 | compliance with                                       |  |
| k.)             | Polyester back film  | 12 µm                | EN 10169 EN 13523-1                                   |  |
|                 | is determined by<br>the minimum bending radius at which no<br>cracks are visible on the coating  | ≲ 2Т                 | ISO 1519<br>EN 13523-7                                |  |
|                 | the paint's resistance to cracking and/or<br>peel-off after rapid deformation of the<br>organic coated   | 15 Joule             | ISO 6272<br>EN 13523-5                                |  |
|                 | Is assessed by using a range of pencils<br>special method. The value is given by<br>the hardness of the last pencil that does<br>not scratch the paint surface.  | Min H                | ASTM D3363<br>EN 13523-4<br>ISO 15184                 |  |
|                 | The specular reflection (gloss) of the coil coated<br>surface is measured using a gloss meter and<br>usually at an angle of 60   | From 50 to 80        | EN 13523-2  |  |
| e               | Is evaluated by exposing a test specimen<br>to a salt fog at 35°C for a given time.<br>Evaluation criteria after the exposure time:  | 1000 hours with Z200 | ISO 7253, ISO 4628-2<br>EN ISO 9227<br>EN 13523-8     |  |
| erated<br>/- A) | UV weathering is evaluated by exposing<br>an organic coated sample to accelerated<br>weathering (UV, humidity and temperature)<br>for 2,000 hours<br>Evaluation is based on color change and<br>gloss retention. | RUV3                 | ISO 4892-3<br>EN 13523-10<br>ASTM D4587<br>EN 10169-2 |  |
|                 |  |                      |   |  |

# STANDARD PRODUCTS

This product range combines all the requirements of the building sector in terms of aesthetic quality and properties such as flexibility, surface hardness, coating adhesion, corrosion and UV resistance etc.

The substrates used for these applications are galvanized skin passed steel to promote corrosion resistance to the substrate, the choice of the steel substrate grade, zinc weight and coat layers depend on the end use and the environment.

Kandil offers these products in a wide range of standard /non standard colors.



# **TECHNICAL PROPERTIES**

Property

Top coat (Dry thick.)

Primer (Dry thick.)

Back coat (Dry thick

Coating Formability (T-bend test)

Impact resistance

Pencil hardness

Gloss

Corrosion resistance Salt spray test

Resistance to acceler UV weathering (QUV-

Warranty conditions" قـد مـع الـعـمـيـل

|                 |  |                      | E VEADO   |
|-----------------|--|----------------------|---|
|                 | Brief description  | Range                | Range 5 YEARS WARRANTY                                |
|                 | Polyester top coat dry film  | 20 µm                | Products are in                                       |
|                 | Epoxy dry film under top/back coat   | 5 µm                 | compliance with<br>EN 10169 EN 13523-1                |
| L.)             | Polyester back film  | 10 µm                | EN 10109 EN 13523-1                                   |
|                 | is determined by the minimum bending<br>radius at which no cracks are visible<br>on the coating  | ≼ зт                 | ISO 1519<br>EN 13523-7                                |
|                 | The paint's resistance to cracking<br>and/or peel-off after rapid deformation<br>of the organic coated   | 15 Joule             | ISO 6272<br>EN 13523-5                                |
|                 | Is assessed by using a range of pencils<br>special method. The value is given by<br>the hardness of the last pencil that does<br>not scratch the paint surface.  | Min H                | ASTM D3363<br>EN 13523-4 ISO<br>15184                 |
|                 | The specular reflection (gloss) of the coil coated surface is measured using a gloss meter and usually at an angle of 60   | From 50 to 80        | EN 13523-2  |
| e               | Is evaluated by exposing a test specimen<br>to a salt fog at 35°C for a given time.<br>Evaluation criteria after the exposure time:  | 500 hours with Z 150 | ISO 7253, ISO 4628-2<br>EN ISO 9227<br>EN 13523-8     |
| erated<br>/- A) | UV weathering is evaluated by exposing<br>an organic coated sample to accelerated<br>weathering (UV, humidity and temperature)<br>for 2,000 hours<br>Evaluation is based on color change and<br>gloss retention. | RUV2                 | ISO 4892-3<br>EN 13523-10<br>ASTM D4587<br>EN 10169-2 |

"Warranty conditions are applied due to client's contract terms"

"تــطبـــق شــروط الـــــضمــان وفــق بــنــود العـــقــد مــع الــعــمـيــل"





# Kandil Thin Organic Coating

ORGAL ORCOL

ORPAN ORLEC





# THE DIFFERENCE BETWEEN NORMAL GI PRODUCT AND KTOC PRODUCT:

# **NORMAL GI**



Surface conversion: 0.10 µ



# **KTOC PRODUCT**

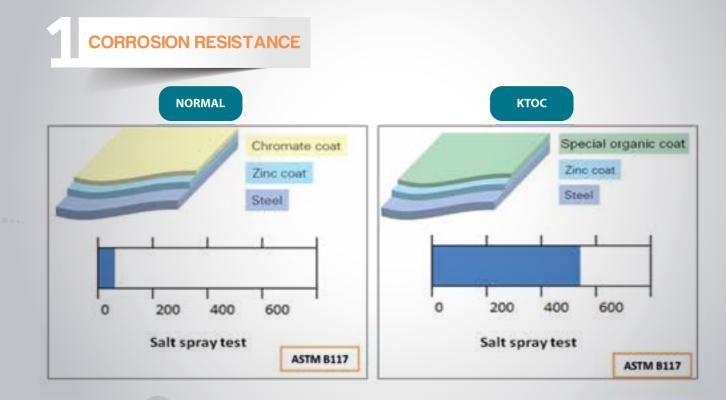


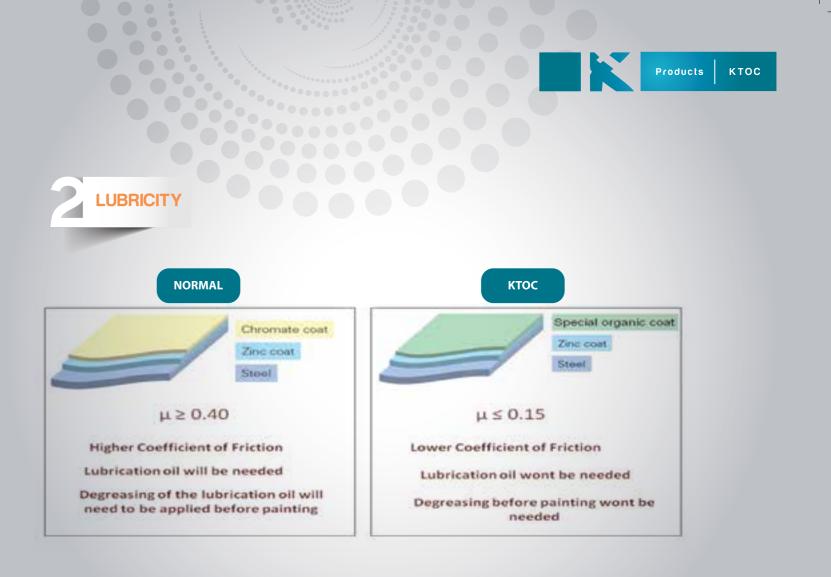
Coating weight: 0.80 ~ 2.00 µ Light Conversion

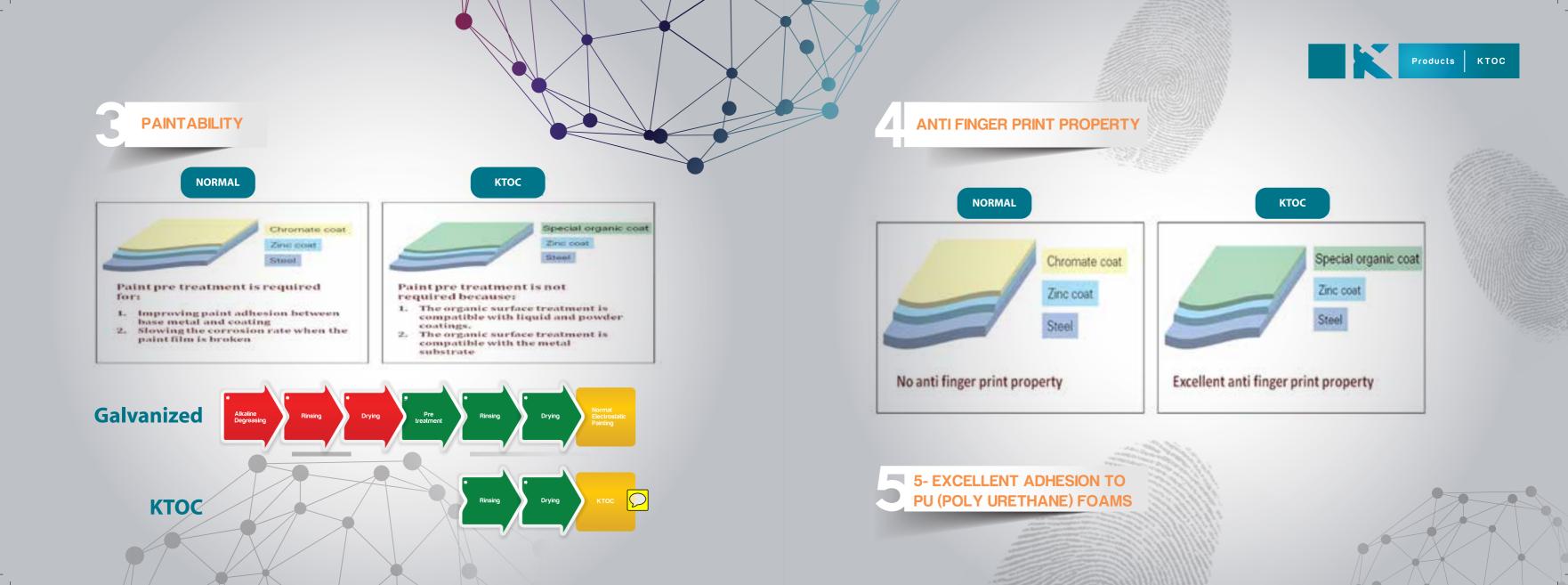
Double contribution to corrosion protection

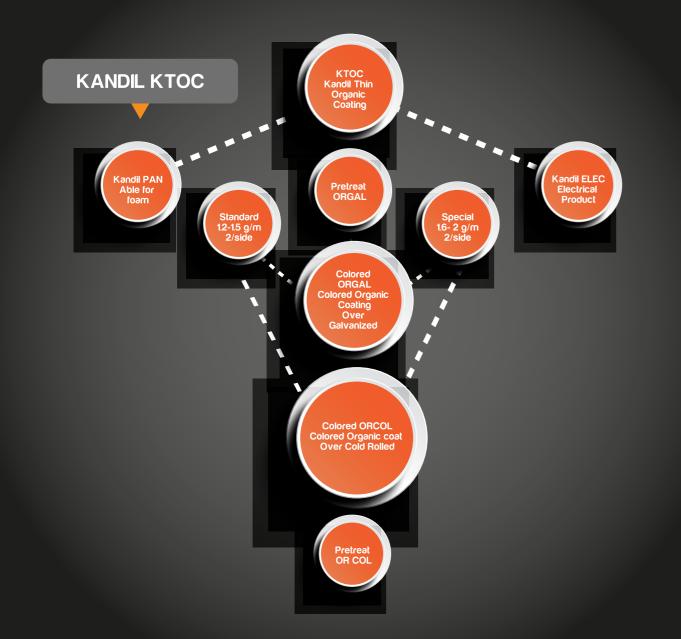


# Performance Measures Of (KTOC) Vs Normal Treatments

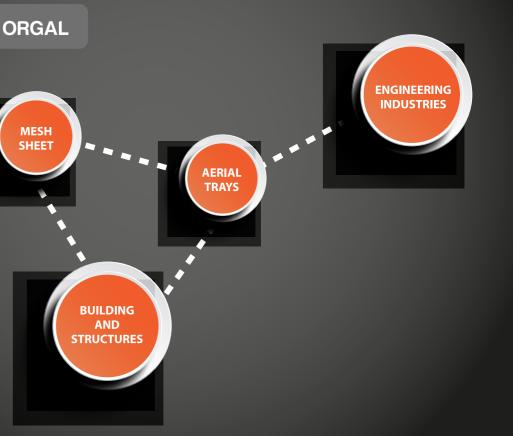








# COLORED ORGAL









KANDIL PAN product is prepainted product, its top side is normal PP (polyester or any painte type) and the back side is coated with organec coat exllelent for foam adhesion acc. Stander testes.

# KANDIL ORLEC





Steel Coated with high conductivity organic coat, used for electric devices such Computer Cases, and DVD drives

# Quality Certifications

# Kandil Ste

# **ISO Certificates:**

The purpose of this brochure is to give you all the information you need to take maximum advantage of everything organic coated steel has to offer.

But it is no more than a technical support tool and not intended as a substitute for direct contact with our technical and commercial teams. Please feel free to contact us for further details.







