EQUIPMENT NAME: Air cooler of PKSK project

VENDOR'S NAME: HATCO-Aban Air Cooler

CONTRACT NO: S-PKSK-P-HAT-97743

02	26.Sep.2020	Issued for Approval	M. Khajehzadeh	M. Abbaszadeh	P. Karimzadeh
01	09.Sep.2020	Issued for Approval	M. Khajehzadeh	M. Abbaszadeh	P. Karimzadeh
0	19.May.2020	Issued for Approval	M. Shamsi	M. Abbaszadeh	P. Karimzadeh
REV.	DATE	DESCRIPTION	PRPD.	CHKD	APPD

PAGE	REV0	REV1	REV2	REV3	REV4
1	x				
2	x				
3	x				
4	x				
5	x				
6	x				
7	x				
8	x				
9	x				
10	x				
11	x				
12	x				
13	x				
14	x				
15	x				
16	x				
17	x	x	x		
18	x	x	x		
19	x				
20	x				
21	x				
22		x			
23		x			
24		x			
25		x			
26		x			
27		x			

PAGE	REV0	REV1	REV2	REV3	REV4
28		x			
29		x			
30			x		
31			x		
32					
33					
34					
35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49					
50					
51					
52					
53					
54					

Table of Contents

1. *Scope*

The following procedure covers the minimum requirements for surface preparation and paint application for air cooled heat exchanger of "**Project: South Pars Gas Field Development, Phases 22, 23 & 24 Onshore Plant is 2000 MMSCFD of reservoir fluid**".

All conflicts between the requirements of this specification, referenced specifications, drawings, paint manufacturer's recommendations, the requisition, or the governing contract shall be referred to the Purchaser for clarification before proceeding with the actual work.

2. *Definition:*

Project: South Pars Gas Field Development, Phases 22, 23 & 24 Onshore Plant is 2000 MMSCFD of reservoir fluid
Owner: Pars Oil and Gas Company
Purchaser: PetroSina Aria (PSA)
Vendor: Aban Air Cooler (AAC)

3. *Reference*

3.1. Painting shall be performed according to the following Codes, Standards, the coating manufacturers' recommendations and this procedure.

- Engineering Standard Specification for Painting: 1228-DE-00-PI-ESS-406
- ASTM D4752
- ISO 8501-1
- EN ISO or ISO standards
- ASTM D3359
- ASTM A123
- ASTM A153

4. *Requirement*

4.1) Coating for the protection of air cooler shall be designed and applied; for the application over the specified minimum surface preparation standards detailed in this procedure.

4.2) The paint system shall generally be based on the operating temperature of the equipment and reference specification.

5. General

5.1) The manufacturer shall provide and maintain in good condition all plant, equipment and tools necessary to carry out the work in and tools necessary to carry out the work in an efficient manner.

5.2) The manufacturer shall provide, unless otherwise instructed, all paints and thinners necessary to carry out the work. The contractor shall purchase such paint from approved manufacturers.

5.3) The manufacturer shall provide skilled and experienced personnel to carry out the work together with competent and qualified supervision.

5.4) The manufacturer shall comply fully with this specification unless otherwise approved by the contractor. Additionally, the work will be subject to continuous inspection by the inspector who will be at liberty to check at every stage that the work is being carried out in accordance with all aspects of this specification.

5.5) Prior to the commencement of work, the manufacturer shall submit for the approval of company, fully detailed procedure as to how he intends to carry out the work within the frame work of this specification & Document.

5.6) The equipment listed below shall be shielded to prevent: damage during surface preparation and painting operations. All opening, including those which are flanged or threaded. Shall be sealed to prevent entry of sand, dust, or coating materials

- Name plates and notices
- Packing glands
- Packing seal
- Pressure gauges
- Gauges glasses
- Instrument dials

5.7) All equipment which should be heat treated, shall be painted after heat treatment. Machined and threaded surfaces shall be protected with temporary rust preventative paint.

6. Surface preparation

6.1) Paint life depends primarily on surface preparation. surface preparation should remove foreign bodies to allow the type of priming paint used to wet the surface thoroughly and develop adequate adhesion.

6.2) All rough-edged cuts & welds, weld spatters, indentations, all surfaces & protrusion must be ground to smooth out the contour before the surface is prepared for painting. Any grinding performed after blast cleaning, must be re-blast to required roughness.

6.3) All bolt holes shall be drilled and blunted before blasting.

6.4) Prior to surface preparation, the surface shall be inspected for spotting oil and grease deposits or pollution on the surface. If any, the deposits of oil or grease shall be removed from the surface by solvent cleaning prior to further surface preparation.

6.5) Required Cleanliness

All surfaces prepared for coatings shall satisfy:

- SA 2 1/2 for temperature up to 120 and SA 3 for above 120 °C according to Swedish Standard SIS 05 5900 or,

- Near White Metal Blast Cleaning of the surface preparation specification SP-10-63 T of the Steel Structures Painting Council or,

- NACE No. 2 Near White Blast Cleaned Surface Finish in accordance with the NACE STANDARD TM-01-70.

6.6) Required Roughness

6.6.1) - All surfaces shall be blast cleaned to obtain a total angular roughness included:

- between 30 and 50 microns when total thickness of the coats of paint applied is less than 400 microns,

- between 50 and 75 microns when total thickness of the coats of the paint applied is greater than 400 microns.

6.6.2) The prepared surfaces should be cleaned using dry air or clean brush.

6.7) Surface preparation shall not take place in the following conditions:

a- At temperature below 5 °C

b- When the relative humidity is greater than 85%

If the air's relative humidity exceeds 80 %, the Applicator must obtain permission from the Company to proceed with or continue with surface preparation. The applicator must provide a hygrometer to measure the air's relative humidity.

c- When the metal surface temperature is less than 3 °C above the ambient dew point or in excess of 38 °C.

d- Paint material shall not be applied in rain, snow, fog or mist, nor to wet damp surfaces or to frosted or ice coated surfaces.

6.8) All abrasives shall be free of dust, dirt and other foreign matter. They shall be of a reusable type and to be kept dry at all times.

Abrasive material for blast cleaning, consisting solely of steel shot shall not be used. A mixture consisting of steel shot and at least 25% by weight steel grit is acceptable.

6.9) Chipping, scraping and steel wire brushing using manual or power-driven tools shall only be used where blast cleaning is impractical, with the approval of owner authorized inspector.

7. Storage, mixing and thinning of products

7.1) STORAGE CONDITION

7.1.1)-All paints and thinner containers shall be kept closed before use and stored under shelter.

7.1.2)-The settlement of heavy paints shall be lessened by rolling the drums in which they are stored every six weeks. Turning the drums on their ends is not allowed. The normal finishing paints & drum paints do not require rolling during the storage period.

7.1.3)-Any paint for which the shelf life is expired shall not be used. The maximum storage time for paints shall be in accordance with manufacturer's recommendations. paints shall not be stored in open containers, even for a short time.

7.1.4)-Paint shall be stored in a well-ventilated room, free from excessive heat or direct rays of the sun & maintained at a temperature of between 4 °C and 27 °C. Open air storage shall be avoided particularly of heavy paints such as primers and undercoats.

7.2) Mixing

7.2.1) Before opening the can, the paint should be checked if it complies with the specification.

7.2.2) Material inspection should be conducted on real paint, and when the contractor opens the can for the first time, the client's inspector should witness it as a rule. Client will inspect the batch.

7.2.3) Paint-can should be opened just before using as a rule: the paint-can once opened, should be securely closed for storage, and better finished early.

7.2.4) Any paint skin, which has formed in the container, shall be cut and removed, if the skin is thicker than 2 mm the paint shall not be used.

7.2.5) The paint in opened can should be stirred sufficiently until it becomes uniform. Up to 20 liters of paint should be stirred manually, and over 20 liters use a machine. No stirring is allowed with compressed air.

7.2.6) Special paints, such as “epoxy resin paint” and “zinc rich paint”, which are supplied as two or more components in separate containers shall be mixed together immediately before their use. The mixed paints shall be applied within their pot life.

7.2.7) When thinner is necessary, unspecified thinner should not be used. Also, the amount should not be exceeded.

7.2.8) For color, it is necessary to use paints mixed to the specified color at the production plant.

7.3) Thinning

7.3.1) No thinners are to be added unless necessary for proper application, thinning must never exceed manufacture recommendations.

7.3.2) Thinners used must be those suggested by the manufacturer.

7.3.3) When use of thinner is authorized by the manufacture, it shall be added during mixing. Thinners must be added under the guidance of the specialist who is thoroughly familiar with the quantity and type of added thinner.

8. Priming

8.1) Prepared surface should be primed generally within four hours or before visible re-rusting occurs. Cleaned surface shall never be left overnight prior to coating, in such case re-blasting or re-cleaning is necessary.

8.2) In order to minimize contamination between successive coat of paint, over coating of the preceding coat shall be done as soon as it is permitted by the particular specification, and not delayed beyond the period specified.

8.3) The primer to finishing coat paint shall be from the same manufacturer for each system to ensure compatibility.

9. Painting application

9.1) Procurement and storage

The quantities of paint and thinners required to perform the entire job shall be procured before the work the quantities of paint and thinners required to perform the entire job shall be procured before the work commences, except in cases where the shelf life of the product is less than the anticipated duration of the work.

Thinners, solvents, etc. shall be stored in a suitably ventilated fireproofed building, separate from other painting consumables.

The products shall be delivered in their original sealed packaging and stored in such conditions as to avoid their degradation. The packaging shall be clearly marked with the product description, the batch number, the fabrication date and the expiry date.

9.2) Application

9.2.1) General

Paint shall always be applied to surfaces that are dry, clean and degreased, for both coating on substrate and previous coat.

In the following cases, no painting work should be done as a rule.

(1) Humidity: 85% or higher

(2) Rainy weather

(3) Temperature: below 5°C

(4) Strong wind and severe sand dust

(5) Painted surface temperature: 50°C or higher

CONTRACTOR shall keep a daily record of the dew point, relative humidity, ambient atmosphere and substrate temperatures (all measured before the work commences and twice per shift and when ambient conditions are obviously changing) to ensure that conditions are acceptable. These records shall be kept and made available to COMPANY. Application shall be by airless spray

10. Galvanizing

10.1) Hot -dip galvanizing shall be in accordance with ASTM A123 on products fabricated from rolled, pressed and forged steel snaps, plates, bars and strips except that pipes for hand railing shall meet ASTM A-153. INSPECTION

11. Inspection

11.1) Contractor shall advise the owner inspector before commencing specific paint applications.

11.2) Inspector shall have the right to inspect the paint work at all stages and to reject any and all tools, instruments, material, staging or equipment of work which do not conform to the specification.

11.3) Each coat paint shall be free from defects and damage. Finished paint shall have the correct shade, degree of gloss and evens and be tree from tackiness after drying/curing and

from cracks, holidays, runs, sags, wrinkles, patchiness brush or roller marks or any defects that may be deleterious to the quality of the coating.

11.4) Prior to final acceptance of completed work, a joint inspection shall be made by contractor and owner inspector and an agreed inspection report to be signed by both parties.

11.5) Inspection by the paint manufacture or an independent inspection service shall not relieve the contractor of responsibility for ensuring that the work is carried out in accordance with the specification.

11.6) Before commencement of shop preparation and painting, a meeting between the coating manufacturer, contractor and company's representative shall be convened, to establish and agree, when necessary, visible blast standard, blast profile, satisfactory application the coating and agreement and calibration of inspection equipment.

11.7) Each coat shall be inspected prior to application of the next coat, Areas found to contain runs, over spray, roughness, cracks or other signs of improper application shall be repaired or recoated in accordance with the authorized inspector recommendation.

12. Quality control and testing

12.1) Contractor shall submit his proposed quality control and testing procedures covering all phases of surface preparation and paint application to company for approval.

12.2) Manufacturers of all materials shall supply test certificates of all tests performed and certificate of compliance stating that the material meets the requirements of the applicable specification.

12.3) Before paint application the prepared surface shall be inspected visually by Quality Control Inspector and if the result is satisfactory the parts can be released for painting.

12.4) After paint application following test shall be performed by Quality Control Departments:

- Visual check
- Thickness check

- Adhesion test

12.5) Visual Check

Coating film should be inspected visually after each application, before application and before application of the next coat in order to verify that the whole surface is free of defect as:

- Mud cracking
- Inclusion and cleanliness
- Holidays
- Bubble
- Mechanical damage
- Runs/Sags
- Over spray

12.6) Thickness Check

Dry film thickness measuring procedure:

(1) Checking equipment:

Micro tester

Electromagnetic film thickness gauge

(2) Checking procedure:

For paint coat accepted in dry–state test, thickness of specified number of coats should be measured in specified places separately. For measuring, the electromagnetic film thickness gauge should be used where applicable. When it is, however, difficult to measure in specific measurement conditions or installation conditions, a micro tester may be used. In any case, the same measuring instrument should be used in the whole process as a rule.

(3) Checking process and period

The paint coat should be measured when the coating film is in dry-hard state after completion of the undercoating and the final coating.

(4) Judgment method

It should be judged whether the measured film thickness is same to specified film thickness.

(5) Criterion

The average specified film thickness should be obtained.

- On each spot, make 5 measurements by moving the probe a short distance for each new gage reading. Take the average of the five-gage reading as the spot measurement. Each coat thickness and total thickness shall be checked. Make five separate spot measurements spaced evenly over each section of the structure 10 m2 in area.

NOTE: Average of spot measurements >= specified DFT

All individual measurements >= 90% of specified DFT

12.7) Adherence Check

Adhesion test shall be performed according to ASTM D4541 or ASTM D3359.

12.8) Inspection Results

All quality control results shall be written up into reports.

All reports shall be submitted to the authorized inspector for approval.

13. Repair of Defects or Damage

Touch up work on damaged surfaces:

Surface is damaged as substrate material is seen:

After surface preparation according to standard ST2, primer layer is applied and after considering required interval for recoating, top coat will be executed.

(2) Surface is scratched:

At first, all oil and grease shall be removed from the surface then top coat will be applied.

(3) Damaged surface touching up could be done with paint brush for small surfaces and spray for large surfaces (in this case, surrounding of damaged surfaces shall be covered to prevent from contacting with intact surfaces).

Where touching up prior to top coating of zinc-based primers is involved, this shall be preceded by thorough cleaning with solvent or an emulsion type cleaner or remove all oil

and grease. This shall be followed by thoroughly hosing down with clean potable water which in the case of surfaces that have not been tie coated shall be carried out in conjunction with manual scrubbing with stiff brushes in order to remove all surface dirt and other contaminants, zinc corrosion products (with rust) etc.

14. Paint system

14.1) Inorganic zinc silicate primer: two component, high build type moisture curing ethyl silicate type zinc primer. The metallic zinc content is a minimum 80% by weight of total solids & provides sacrificial protection & high anti-corrosive stability to steel surfaces. Continuous heat resistance is achieved in the temperature range up to 400 °C.

Organic zinc rich primer: two components epoxy based zinc rich primer. The metallic zinc content is a minimum 80% by weight of total solids & provides sacrificial protection & high anti-corrosive stability to steel surfaces. Continuous heat resistance is achieved in the temperature range up to 150 °C.

Single pack silicon acrylic: Vehicles are silicon and acrylic resins. Pigmented with titanium dioxide and heat resistant colorant, Volume solids 31 to 37%, Dry film thickness 25-40 microns (1-1 1/2 mils), Temperature resistance 200°C.

High build Epoxy polyamide: two component polyamide cured high build epoxy paint. Generally, it has good resistance to chemicals & exhibits good durability. Continuous heat resistance is achieved in the temperature range up to plus 120 °C.

One coat of two pack high build/high solids epoxy surface tolerant coating: Vehicle is epoxy resin and aromatic amine or other suitable curing agent (Chemical curing). Pigmented with chemical and corrosion resistant pigments temperature resistance 120°C, Dry film thickness 125 microns, Volume solids 65-85%

Polyurethane: Two component isocyanate-free, aliphatic type polyurethane top coat. Generally, this paint product extremely hard & good chemical, weather resistance & excellent durability & gloss retention.

14.2) Paint system applicable shall be in accordance with A.

15. Painting reports

See Attachment 1.

Attachment 1

AAC	Quality Control	Report No.:
	Painting Report	Date Of Exam. :

PROCEDURE No. :
DOCUMENT NO . :
SAND BLAST : TOTAL
PRIMER : THK :
INTERMEDIATE : THK :
FINISHING : THK :
FINISH COLOR :
Temperature : Humidity : Dew point temp :

ITEM NO:

SR. No.	Description	THK(mic)	Result	Date	TIME	Curing & adhesion
1	Sand Blast					
2	Primer					
3	Intermediate					
4	Finish					

Note:

Inspector	A.A.C Inspector	CLIENT	TPA
NAME & SIGNATURE			
Qualification			
DATE			

Paint System Determination

Item No.	*Material*	*Insulation*	*Fireproofed*	*Operating Temperature (°C)*	*Paint System*
149-A-101A/B	Stainless Steel	No	No	195	*10*
149-A-102A/B	Stainless Steel	No	No	253	*10*
149-A-103A/B	Stainless Steel	No	No	74	*10*
Steel Structures Plenum, Fan casing, Fan guard	Carbon Steel	No	No	Ambient	2

Paint	Negin Zereh Paint Code
Zinc Rich Epoxy	NZ-516
Modified Epoxy	NZ-561
Epoxy HB	NZ-561
Epoxy	NZ-531
Modified Polyurethane	NZ-641

Paint system 10:

Item: 149-A-101A/B, 149-A-102A/B 149-A-103A/B Header Boxes		Operating Temperature:	160 to 500°C
Minimum surface preparation			SA 2 1/2 or SSPC 10
Paint and DFT (microns)	Primer	Epoxy	30
	Intermediate	Epoxy HB	2x100
	Finishing	Modified Polyurethane	40
Total DFT (microns)			270
Finishing RAL	Header Box		9010- white

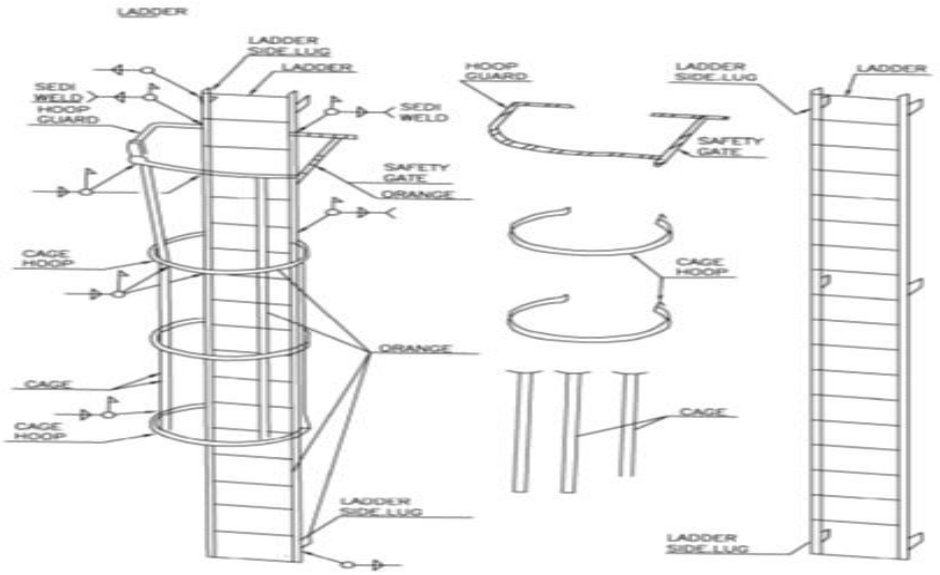
02

Paint system 2 (Surface Profile 30-60 µm):

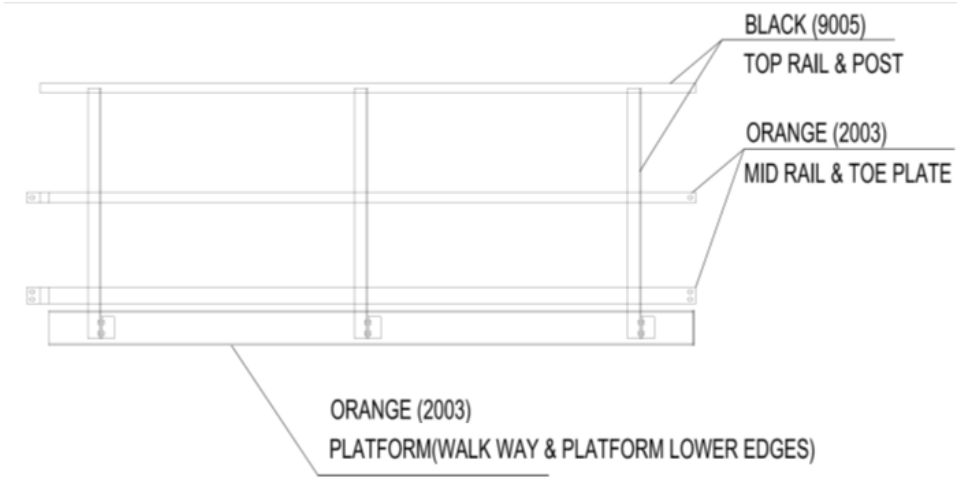
Item: Steel structure, fan casing and plenum, Side frame		Operating Temperature:	Up to 90°C
Minimum surface preparation			SA 2 1/2 or SSPC 10
Paint and DFT (microns)	Primer	Zinc Rich Epoxy	75
	Intermediate	Modified Epoxy	2x100
	Finishing	Modified Polyurethane	40
Total DFT (microns)			315µm
Finishing RAL			
			Ral 9010

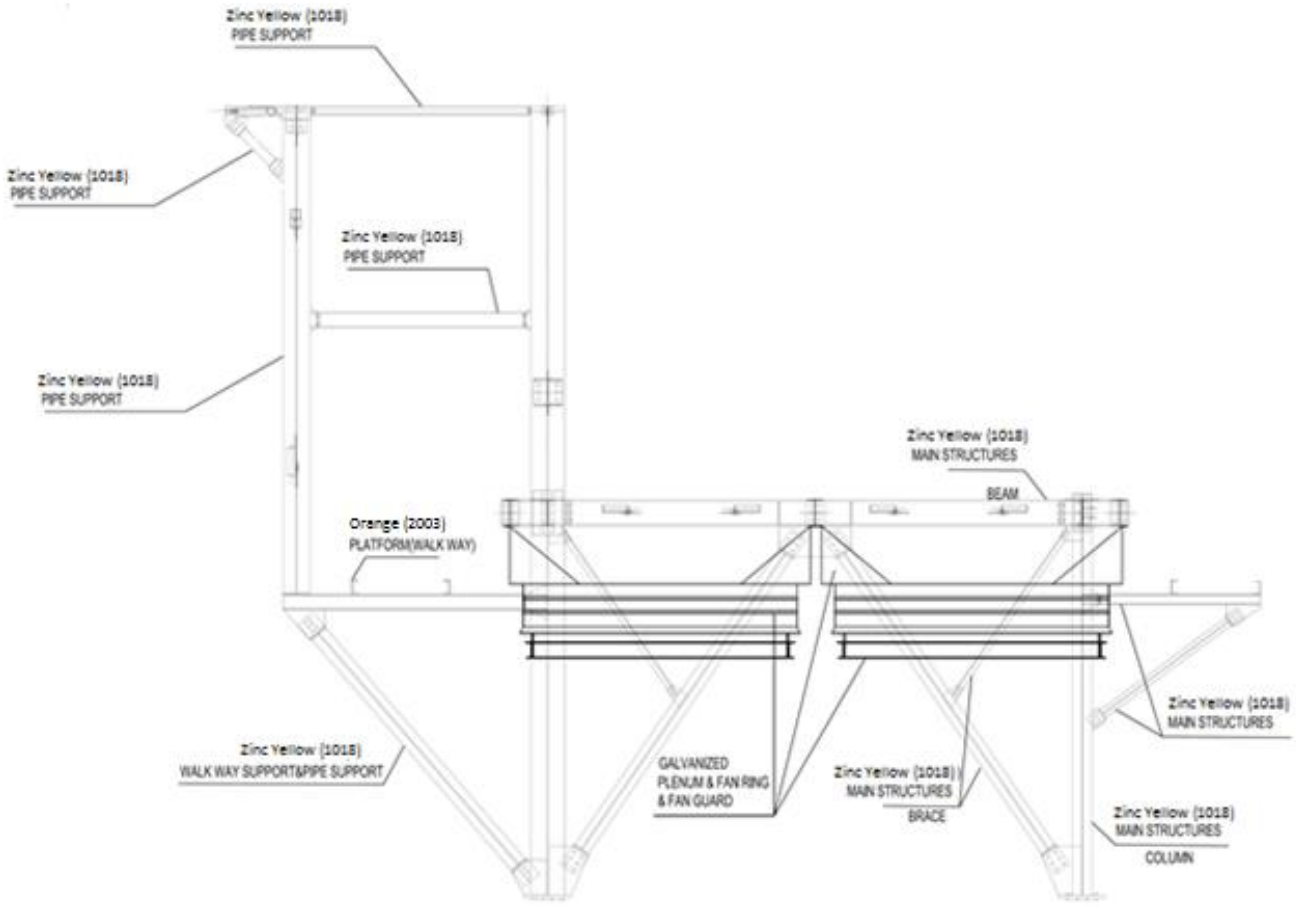
Paint	Negin Zereh Paint Code
Zinc Rich Epoxy	NZ-516
Modified Epoxy	NZ-561
Epoxy HB	NZ-561
Epoxy	NZ-531
Modified Polyurethane	NZ-641

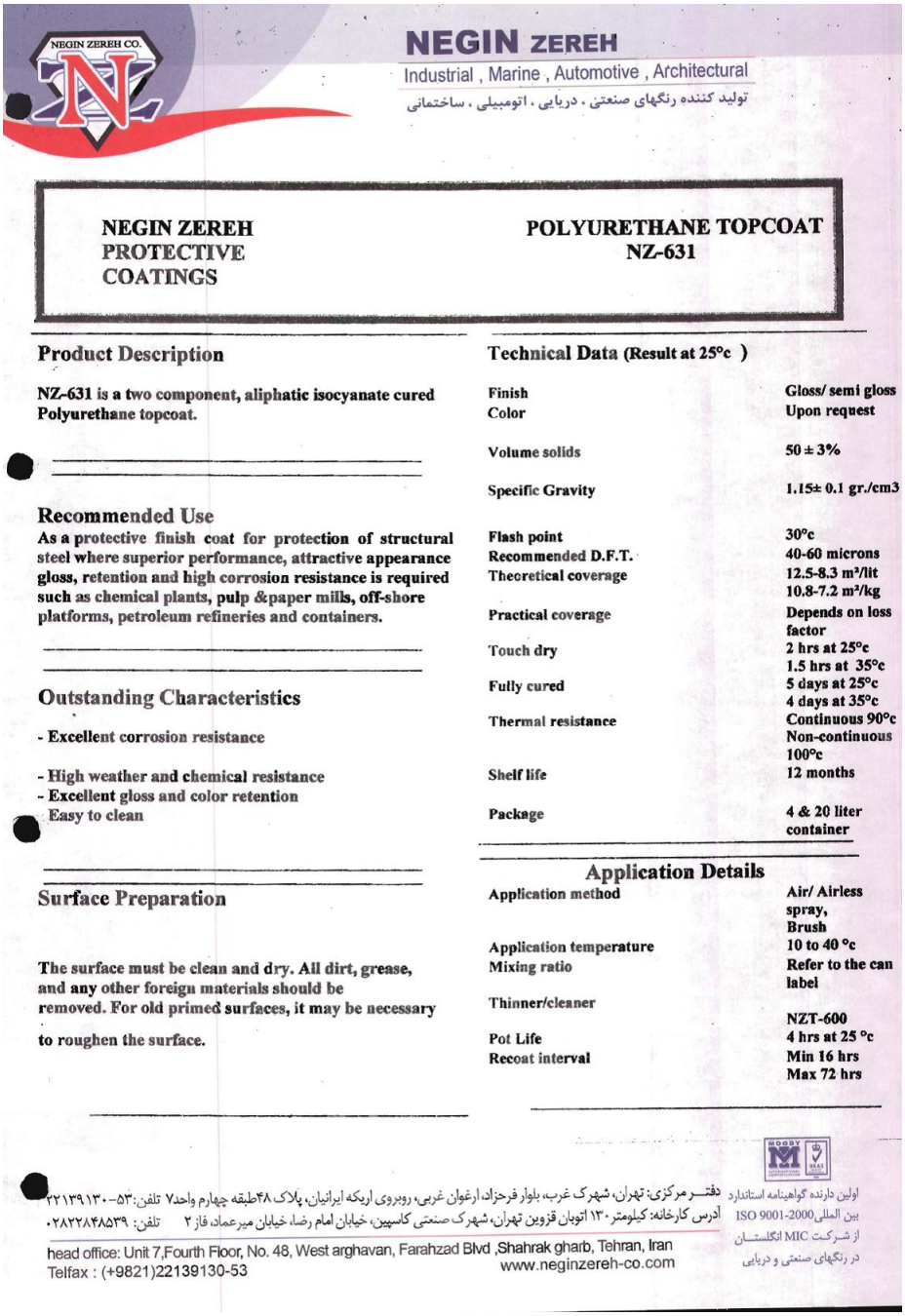
02



LADDER (ALL BLACK RAL 9005)
SAFETY GATE OR SAFETY DEVICE (ORANGE RAL 2003)


BLACK (9005)
TOP RAIL & POST
ORANGE (2003)
MID RAIL & TOE PLATE
ORANGE (2003)
PLATFORM(WALK WAY & PLATFORM LOWER EDGES)


Zinc Yellow (1018)
PIPE SUPPORT
Zinc Yellow (1018)
PIPE SUPPORT
Zinc Yellow (1018)
PIPE SUPPORT
Zinc Yellow (1018)
PIPE SUPPORT
Zinc Yellow (1018)
MAIN STRUCTURES
BEAM
Orange (2003)
PLATFORM(WALK WAY)
Zinc Yellow (1018)
MAIN STRUCTURES
Zinc Yellow (1018)
WALK WAY SUPPORT&PIPE SUPPORT
GALVANIZED
PLENUM & FAN RING
& FAN GUARD
Zinc Yellow (1018)
MAIN STRUCTURES
BRACE
Zinc Yellow (1018)
MAIN STRUCTURES
COLUMN



NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

POLYURETHANE TOPCOAT NZ-631

Product Description

NZ-631 is a two component, aliphatic isocyanate cured Polyurethane topcoat.

Recommended Use

As a protective finish coat for protection of structural steel where superior performance, attractive appearance gloss, retention and high corrosion resistance is required such as chemical plants, pulp &paper mills, off-shore platforms, petroleum refineries and containers.

Outstanding Characteristics

- **Excellent corrosion resistance**
- **High weather and chemical resistance**
- **Excellent gloss and color retention**
- **Easy to clean**

Surface Preparation

The surface must be clean and dry. All dirt, grease, and any other foreign materials should be removed. For old primed surfaces, it may be necessary to roughen the surface.

Technical Data (Result at 25°c)

Finish	Gloss/ semi gloss
Color	Upon request
Volume solids	50 ± 3%
Specific Gravity	1.15± 0.1 gr./cm3
Flash point	30°c
Recommended D.F.T.	40-60 microns
Theoretical coverage	12.5-8.3 m²/lit 10.8-7.2 m²/kg
Practical coverage	Depends on loss factor
Touch dry	2 hrs at 25°c 1.5 hrs at 35°c
Fully cured	5 days at 25°c 4 days at 35°c
Thermal resistance	Continuous 90°c Non-continuous 100°c
Shelf life	12 months
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	10 to 40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-600
Pot Life	4 hrs at 25 °c
Recoat interval	Min 16 hrs Max 72 hrs

دفتر مرکزی: تهران، شهرک غرب، بلوار فرحزاد، ارغوان غربی، روبروی اریکه ایرانیان، پلاک ۴۸ طبقه چهارم واحد ۷ تلفن: ۵۳-۲۲۱۳۹۱۳۰

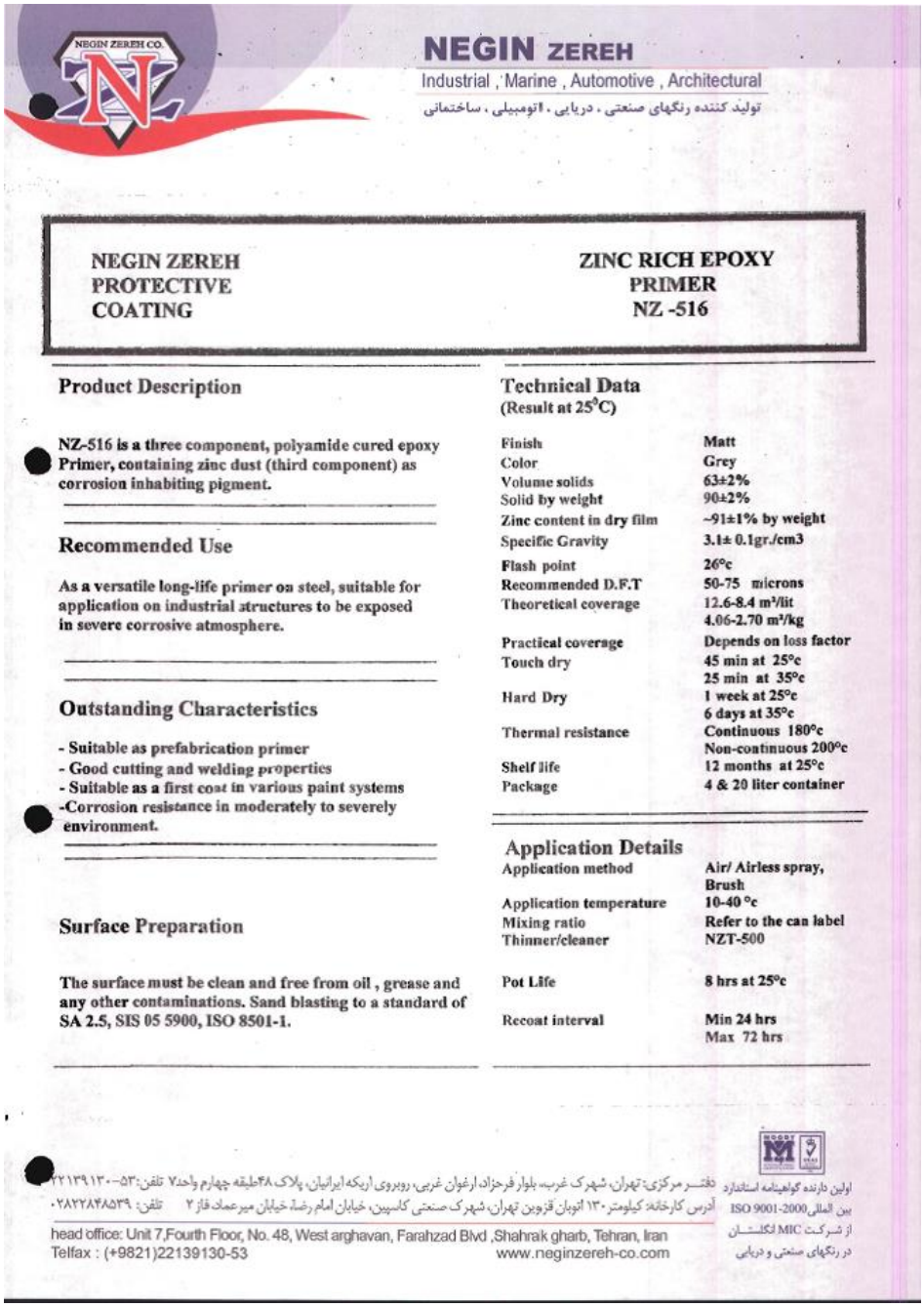
آدرس کارخانه: کیلومتر ۱۳۰ آتوبان قزوین تهران، شهرک صنعتی کاسپین، خیابان امام رضا، خیابان میرعماد، فاز ۲ تلفن: ۰۲۸۲۲۸۴۸۵۳۹

head office: Unit 7,Fourth Floor, No. 48, West arghavan, Farahzad Blvd ,Shahrak gharb, Tehran, Iran

Telfax : (+9821)22139130-53

www.neginzereh-co.com

اولین دارنده گواهینامه استاندارد بین المللی ISO 9001-2000 از شرکت MIC انگلستان در رنگهای صنعتی و دریایی



NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATING

ZINC RICH EPOXY PRIMER NZ -516

Product Description

NZ-516 is a three component, polyamide cured epoxy Primer, containing zinc dust (third component) as corrosion inhabiting pigment.

Recommended Use

As a versatile long-life primer on steel, suitable for application on industrial structures to be exposed in severe corrosive atmosphere.

Outstanding Characteristics

- **Suitable as prefabrication primer**
- **Good cutting and welding properties**
- **Suitable as a first coat in various paint systems**
- **Corrosion resistance in moderately to severely environment.**

Surface Preparation

The surface must be clean and free from oil , grease and any other contaminations. Sand blasting to a standard of SA 2.5, SIS 05 5900, ISO 8501-1.

Technical Data

(Result at 25°C)

Finish	Matt
Color	Grey
Volume solids	63±2%
Solid by weight	90±2%
Zinc content in dry film	~91±1% by weight
Specific Gravity	3.1± 0.1gr./cm3
Flash point	26°c
Recommended D.F.T	50-75 microns
Theoretical coverage	12.6-8.4 m²/lit 4.06-2.70 m²/kg
Practical coverage	Depends on loss factor
Touch dry	45 min at 25°c 25 min at 35°c
Hard Dry	1 week at 25°c 6 days at 35°c
Thermal resistance	Continuous 180°c Non-continuous 200°c
Shelf life	12 months at 25°c
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	10-40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	8 hrs at 25°c
Recoat interval	Min 24 hrs Max 72 hrs

دفتر مرکزی: تهران، شهرک غرب، بلوار فرحزاد، ارغوان غربی، روبروی اریکه ایرانیان، پلاک ۴۸، طبقه چهارم واحد ۷ تلفن: ۵۳-۲۲۱۳۹۱۳۰

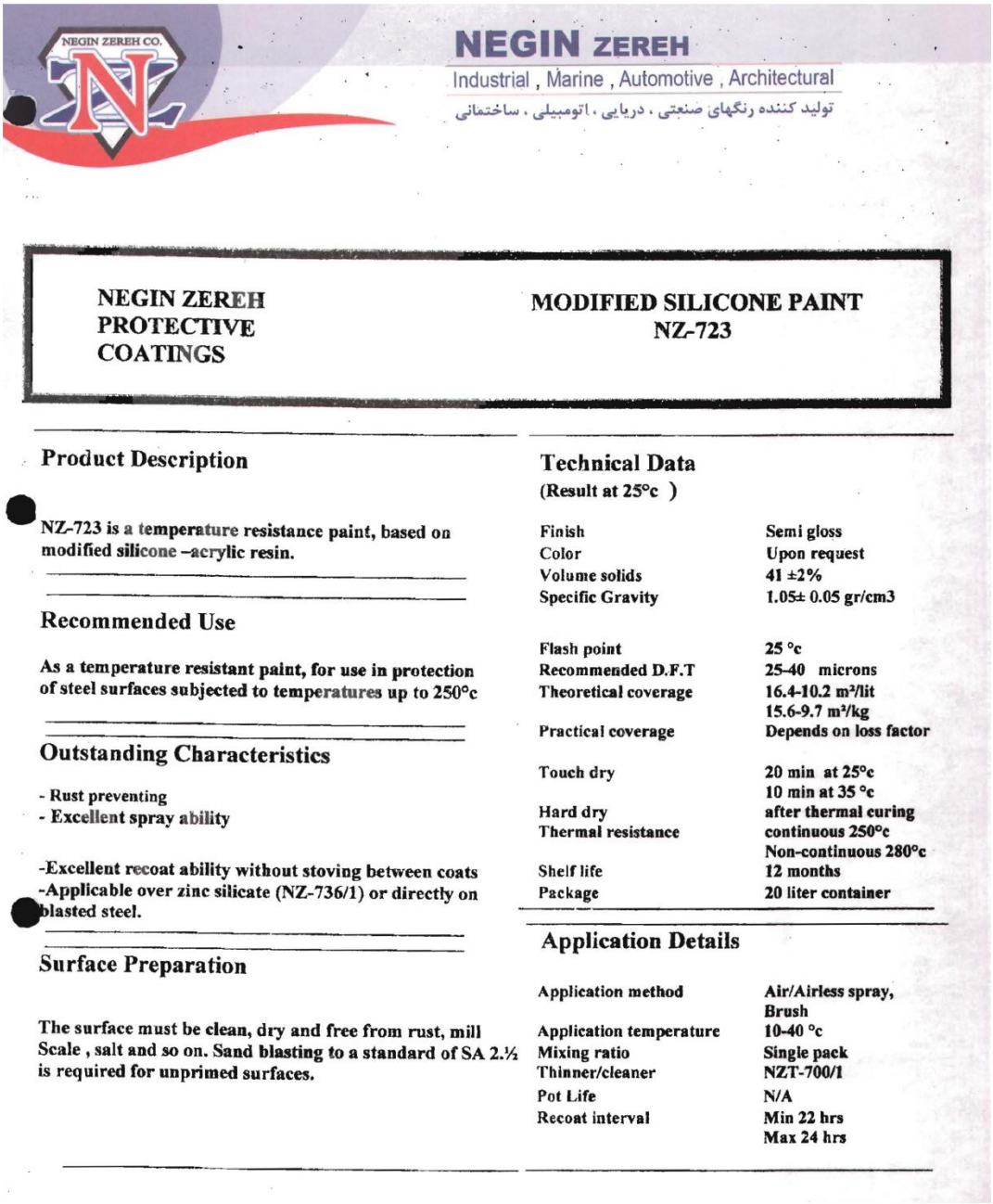
آدرس کارخانه: کیلومتر ۱۳۰ اتوبان قزوین تهران، شهرک صنعتی کاسپین، خیابان امام رضا، خیابان میرعماد فاز ۲ تلفن: ۰۲۸۲۲۸۸۸۵۳۹

head office: Unit 7,Fourth Floor, No. 48, West arghavan, Farahzad Blvd ,Shahrak gharb, Tehran, Iran

Telfax : (+9821)22139130-53

www.neginzereh-co.com

اولین دارنده گواهینامه استاندارد بین المللی ISO 9001-2000 از شرکت MIC انگلستان در رنگهای صنعتی و دریایی



NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

MODIFIED SILICONE PAINT NZ-723

Product Description

NZ-723 is a temperature resistance paint, based on modified silicone –acrylic resin.

Recommended Use

As a temperature resistant paint, for use in protection of steel surfaces subjected to temperatures up to 250°c

Outstanding Characteristics

- Rust preventing
- Excellent spray ability

-Excellent recoat ability without stoving between coats
-Applicable over zinc silicate (NZ-736/1) or directly on blasted steel.

Surface Preparation

The surface must be clean, dry and free from rust, mill Scale , salt and so on. Sand blasting to a standard of SA 2.½ is required for unprimed surfaces.

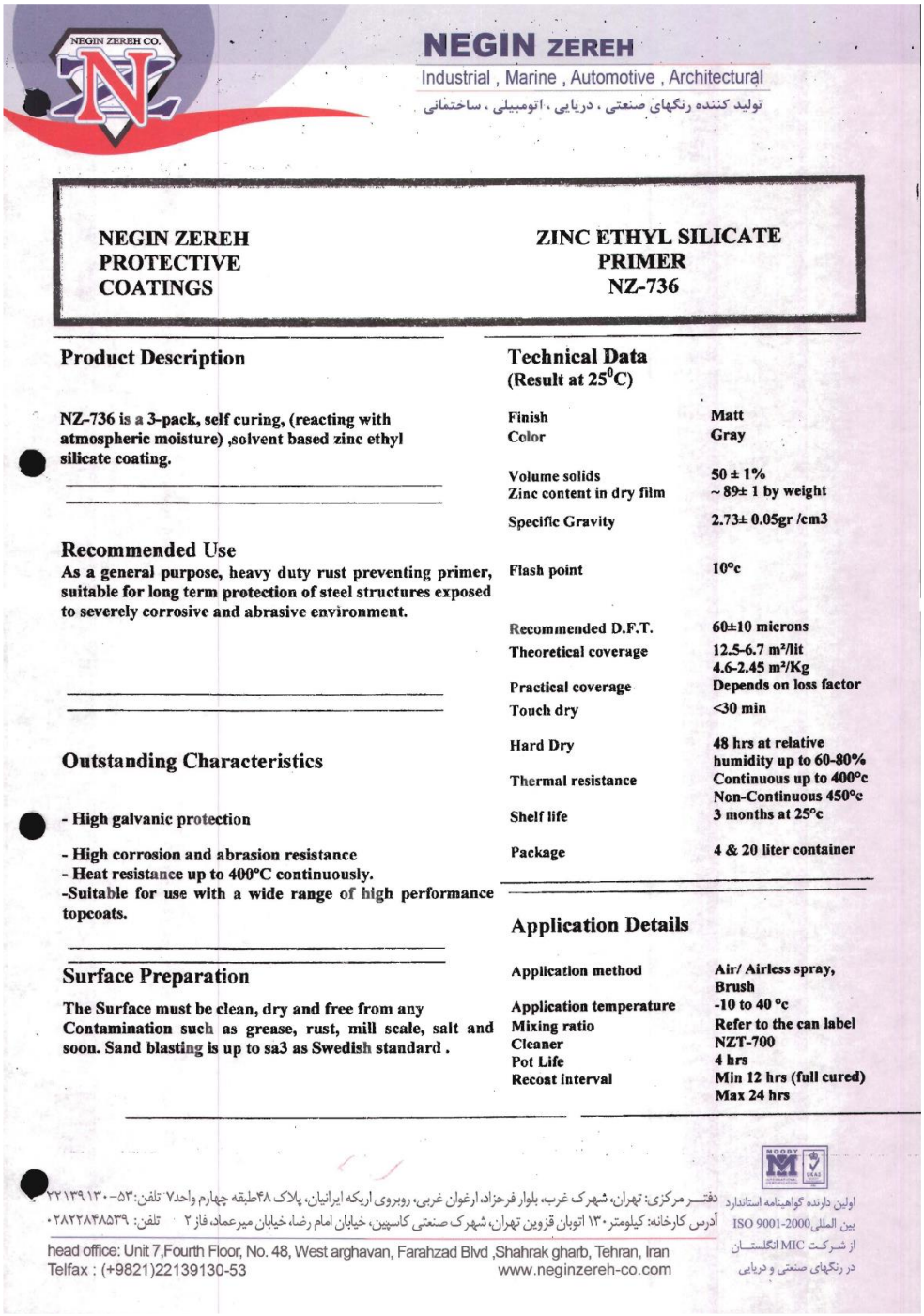
Technical Data

(Result at 25°c)

Finish	Semi gloss
Color	Upon request
Volume solids	41 ±2%
Specific Gravity	1.05± 0.05 gr/cm3
Flash point	25 °c
Recommended D.F.T	25-40 microns
Theoretical coverage	16.4-10.2 m²/lit 15.6-9.7 m²/kg
Practical coverage	Depends on loss factor
Touch dry	20 min at 25°c 10 min at 35 °c
Hard dry	after thermal curing
Thermal resistance	continuous 250°c Non-continuous 280°c
Shelf life	12 months
Package	20 liter container

Application Details

Application method	Air/Airless spray, Brush
Application temperature	10-40 °c
Mixing ratio	Single pack
Thinner/cleaner	NZT-700/1
Pot Life	N/A
Recoat interval	Min 22 hrs Max 24 hrs



NEGIN ZEREH CO.

NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

ZINC ETHYL SILICATE PRIMER NZ-736

Product Description

NZ-736 is a 3-pack, self curing, (reacting with atmospheric moisture) ,solvent based zinc ethyl silicate coating.

Recommended Use

As a general purpose, heavy duty rust preventing primer, suitable for long term protection of steel structures exposed to severely corrosive and abrasive environment.

Outstanding Characteristics

- High galvanic protection
- High corrosion and abrasion resistance
- Heat resistance up to 400°C continuously.
- Suitable for use with a wide range of high performance topcoats.

Surface Preparation

The Surface must be clean, dry and free from any Contamination such as grease, rust, mill scale, salt and soon. Sand blasting is up to sa3 as Swedish standard .

Technical Data (Result at 25°C)

Finish	Matt
Color	Gray
Volume solids	50 ± 1%
Zinc content in dry film	~ 89± 1 by weight
Specific Gravity	2.73± 0.05gr /cm3
Flash point	10°c
Recommended D.F.T.	60±10 microns
Theoretical coverage	12.5-6.7 m²/lit 4.6-2.45 m²/Kg
Practical coverage	Depends on loss factor
Touch dry	<30 min
Hard Dry	48 hrs at relative humidity up to 60-80%
Thermal resistance	Continuous up to 400°c Non-Continuous 450°c
Shelf life	3 months at 25°c
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	-10 to 40 °c
Mixing ratio	Refer to the can label
Cleaner	NZT-700
Pot Life	4 hrs
Recoat interval	Min 12 hrs (full cured) Max 24 hrs

دفتر مرکزی: تهران، شهرک غرب، بلوار فرحزاد، ارغوان غربی، روبروی اریکه ایرانیان، پلاک ۴۸ طبقه چهارم واحد ۷ تلفن: ۵۳-۲۲۱۳۹۱۳۰

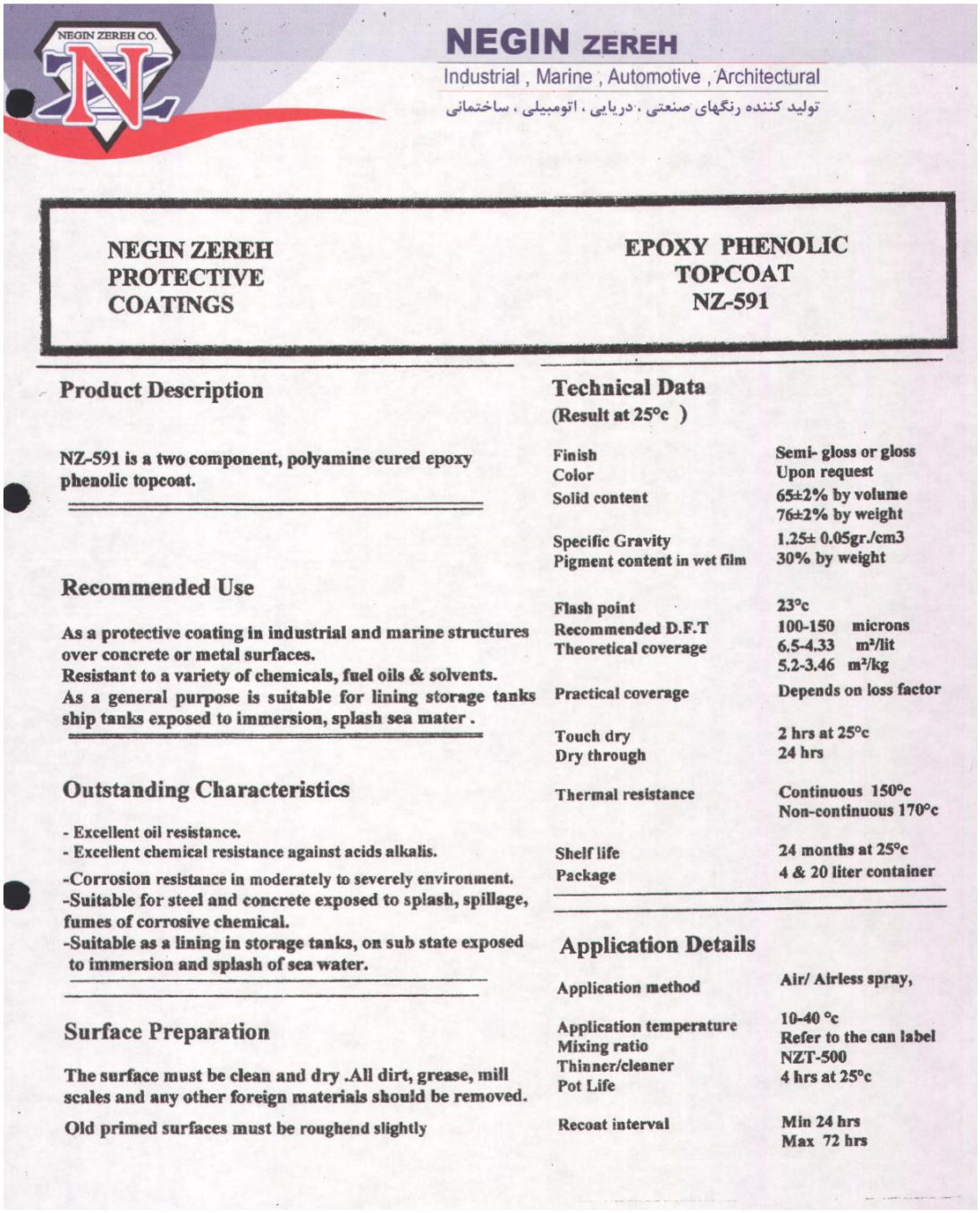
آدرس کارخانه: کیلومتر ۱۳۰ اتوبان قزوین تهران، شهرک صنعتی کاسپین، خیابان امام رضا، خیابان میرعماد، فاز ۲ تلفن: ۰۲۸۲۲۸۴۸۵۳۹

اولین دارنده گواهینامه استاندارد بین المللی ISO 9001-2000 از شرکت MIC انگلستان در رنگهای صنعتی و دریایی

head office: Unit 7,Fourth Floor, No. 48, West arghavan, Farahzad Blvd ,Shahrak gharb, Tehran, Iran

Telfax : (+9821)22139130-53

www.neginzereh-co.com



NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

EPOXY PHENOLIC TOPCOAT NZ-591

Product Description

NZ-591 is a two component, polyamine cured epoxy phenolic topcoat.

Recommended Use

As a protective coating in industrial and marine structures over concrete or metal surfaces.
Resistant to a variety of chemicals, fuel oils & solvents.
As a general purpose is suitable for lining storage tanks ship tanks exposed to immersion, splash sea mater .

Outstanding Characteristics

- Excellent oil resistance.
- Excellent chemical resistance against acids alkalis.
- Corrosion resistance in moderately to severely environment.
- Suitable for steel and concrete exposed to splash, spillage, fumes of corrosive chemical.
- Suitable as a lining in storage tanks, on sub state exposed to immersion and splash of sea water.

Surface Preparation

The surface must be clean and dry .All dirt, grease, mill scales and any other foreign materials should be removed.

Old primed surfaces must be roughend slightly

Technical Data

(Result at 25°c)

Finish	Semi- gloss or gloss
Color	Upon request
Solid content	65±2% by volume 76±2% by weight
Specific Gravity	1.25± 0.05gr./cm3
Pigment content in wet film	30% by weight
Flash point	23°c
Recommended D.F.T	100-150 microns
Theoretical coverage	6.5-4.33 m²/lit 5.2-3.46 m²/kg
Practical coverage	Depends on loss factor
Touch dry	2 hrs at 25°c
Dry through	24 hrs
Thermal resistance	Continuous 150°c Non-continuous 170°c
Shelf life	24 months at 25°c
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray,
Application temperature	10-40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	4 hrs at 25°c
Recoat interval	Min 24 hrs Max 72 hrs

NEGIN ZEREH CO.

NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

EPOXY PHENOLIC AMINE CURED PRIMER NZ-538

Product Description

NZ-538 is a two component, polyamine cured, modified epoxy.

Recommended Use

As a protective coating in industrial and marine structures over concrete or metal surfaces.
Resistant to a variety of chemicals, fuel oils and solvents.
As a general purpose is suitable for lining storage tanks ship tanks exposed to immersion, splash sea mater.

Outstanding Characteristics

- Excellent oil resistance.
- Excellent chemical resistance against acids alkalis.
- Corrosion resistance in moderately to severely environment.
- Suitable for steel and concrete exposed to splash, spillage, fumes of corrosive chemical.
- Suitable as a lining in storage tanks, on sub state exposed to immersion and splash of sea water .

Surface Preparation

The surface must be clean and dry .All dirt, grease, mill scales and any other foreign materials should be removed.
Old primed surfaces must be.
Blast to Sa 2.5, the roughness profile should be 40-75 micron.

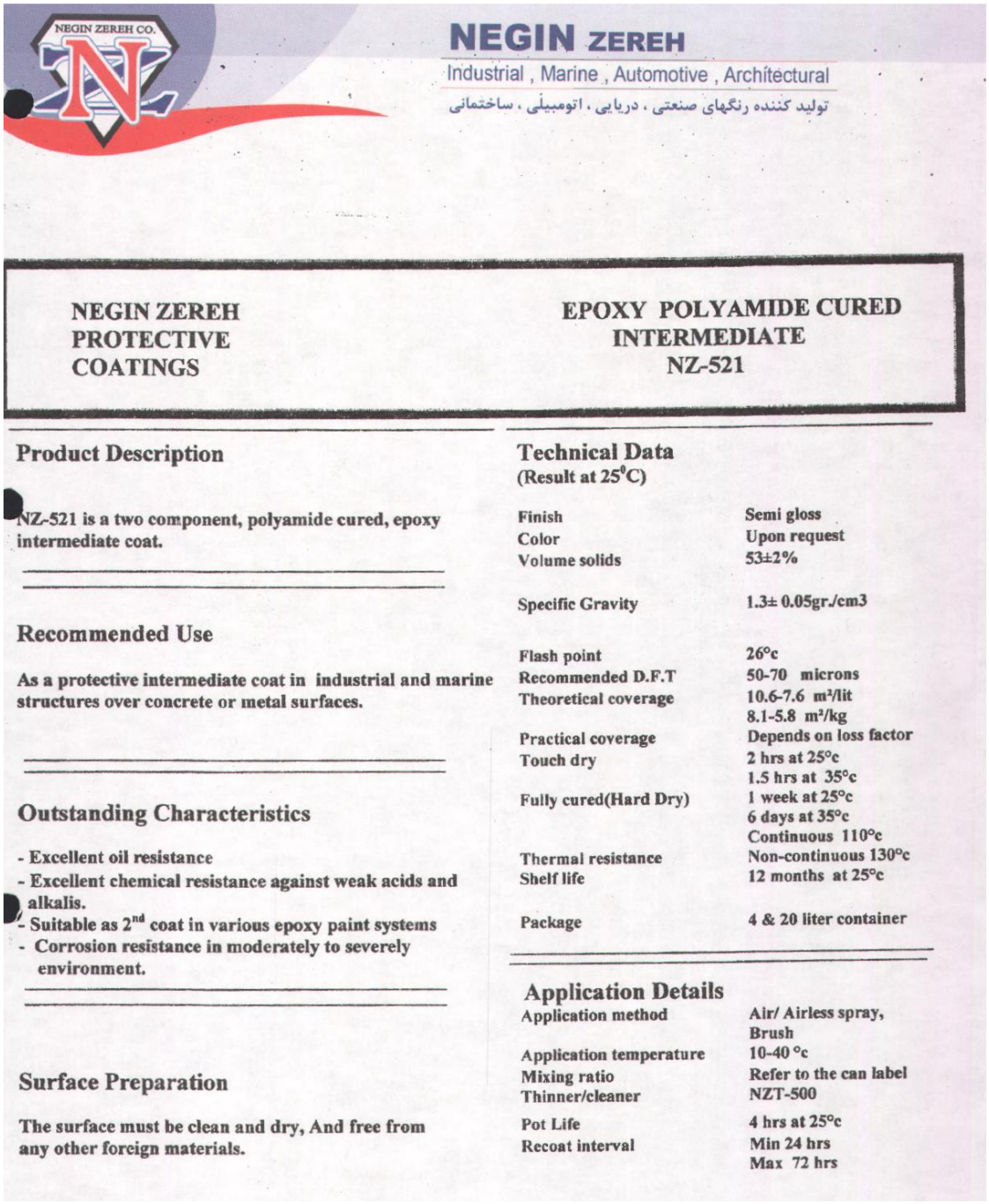
Technical Data

(Result at 25°c)

Finish	Flat
Color	White , pearl gray
Volume solids	68±2%
Solid content	80±2% by weight
Specific Gravity	1.35± 0.05gr./cm3
Flash point	23°c
Recommended D.F.T	100-150 microns
Theoretical coverage	6.8- 4.53 m²//lit 5.03-3.35 m²//kg
Practical coverage	Depends on loss factor
Touch dry	2hrs at 20°c
Dry through	16 hrs 3 days at 35°c
Thermal resistance	Continuous 150°c Non-continuous 200°c
Shelf life	24 months at 20°c
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	10-40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	4 hrs at 20°c
Recoat interval	Min 24 hrs Max 72 hrs



NEGIN ZEREH CO.

NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

EPOXY POLYAMIDE CURED INTERMEDIATE NZ-521

Product Description

NZ-521 is a two component, polyamide cured, epoxy intermediate coat.

Recommended Use

As a protective intermediate coat in industrial and marine structures over concrete or metal surfaces.

Outstanding Characteristics

- Excellent oil resistance
- Excellent chemical resistance against weak acids and alkalis.
- Suitable as 2nd coat in various epoxy paint systems
- Corrosion resistance in moderately to severely environment.

Surface Preparation

The surface must be clean and dry, And free from any other foreign materials.

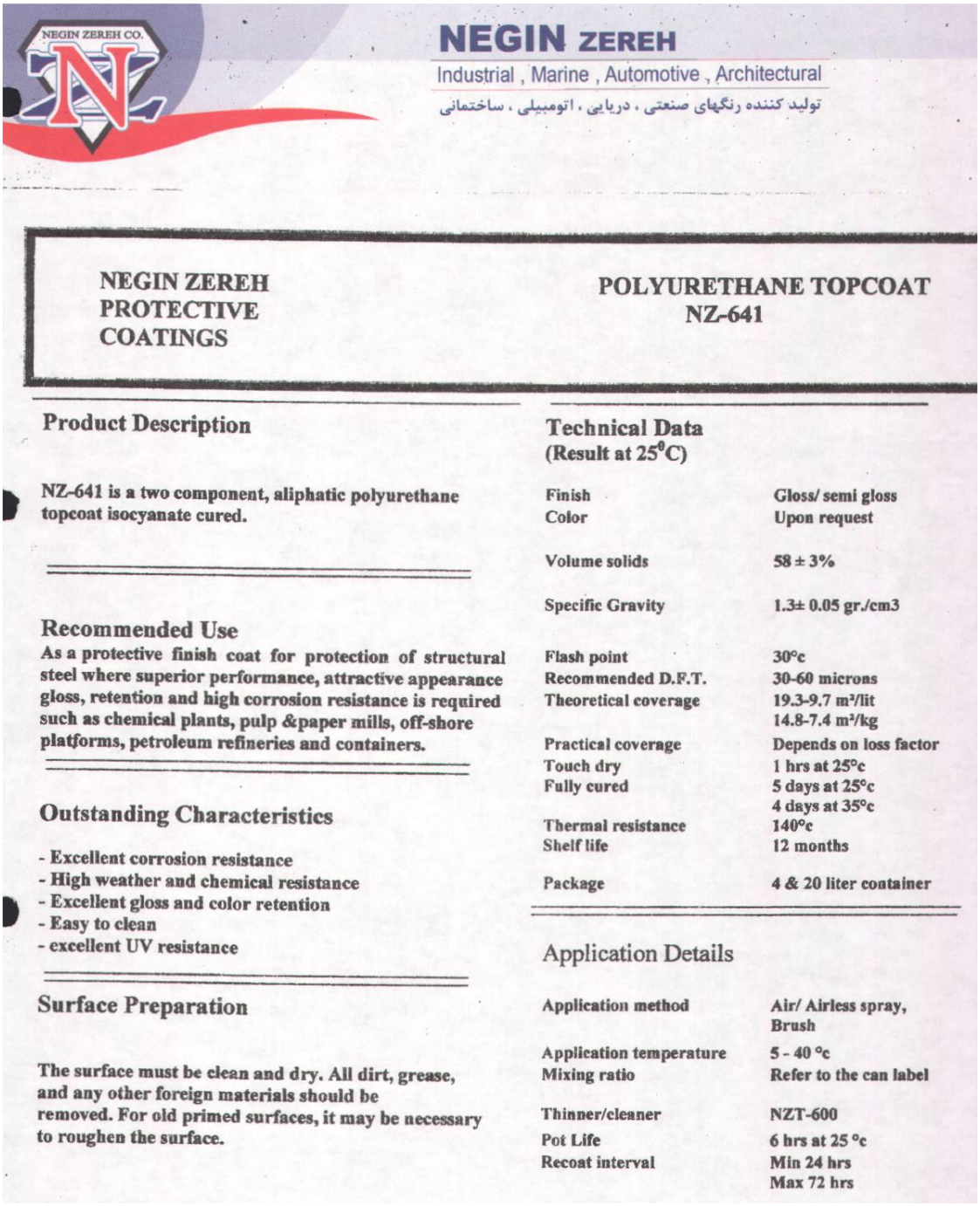
Technical Data

(Result at 25°C)

Finish	Semi gloss
Color	Upon request
Volume solids	53±2%
Specific Gravity	1.3± 0.05gr./cm3
Flash point	26°c
Recommended D.F.T	50-70 microns
Theoretical coverage	10.6-7.6 m²/lit 8.1-5.8 m²/kg
Practical coverage	Depends on loss factor
Touch dry	2 hrs at 25°c 1.5 hrs at 35°c
Fully cured(Hard Dry)	1 week at 25°c 6 days at 35°c Continuous 110°c
Thermal resistance	Non-continuous 130°c
Shelf life	12 months at 25°c
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	10-40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	4 hrs at 25°c
Recoat interval	Min 24 hrs Max 72 hrs



NEGIN ZEREH CO.

NEGIN ZEREH

Industrial , Marine , Automotive , Architectural

تولید کننده رنگهای صنعتی ، دریایی ، اتومبیلی ، ساختمانی

NEGIN ZEREH PROTECTIVE COATINGS

POLYURETHANE TOPCOAT NZ-641

Product Description

NZ-641 is a two component, aliphatic polyurethane topcoat isocyanate cured.

Recommended Use

As a protective finish coat for protection of structural steel where superior performance, attractive appearance gloss, retention and high corrosion resistance is required such as chemical plants, pulp &paper mills, off-shore platforms, petroleum refineries and containers.

Outstanding Characteristics

- Excellent corrosion resistance
- High weather and chemical resistance
- Excellent gloss and color retention
- Easy to clean
- excellent UV resistance

Surface Preparation

The surface must be clean and dry. All dirt, grease, and any other foreign materials should be removed. For old primed surfaces, it may be necessary to roughen the surface.

Technical Data (Result at 25°C)

Finish	Gloss/ semi gloss
Color	Upon request
Volume solids	58 ± 3%
Specific Gravity	1.3± 0.05 gr./cm3
Flash point	30°c
Recommended D.F.T.	30-60 microns
Theoretical coverage	19.3-9.7 m²/lit 14.8-7.4 m²/kg
Practical coverage	Depends on loss factor
Touch dry	1 hrs at 25°c
Fully cured	5 days at 25°c 4 days at 35°c
Thermal resistance	140°c
Shelf life	12 months
Package	4 & 20 liter container

Application Details

Application method	Air/ Airless spray, Brush
Application temperature	5 - 40 °c
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-600
Pot Life	6 hrs at 25 °c
Recoat interval	Min 24 hrs Max 72 hrs

NEGIN ZEREH PARS Co.

Industrial, Marine, Water Base, Architectural Paint

POLYAMIDE CURED EPOXY TOPCOAT NZ-531

Product Description

NZ-531 is a two component, polyamide cured, epoxy topcoat.

Recommended Use

As a protective topcoat in industrial and marine structures over concrete or metal surfaces.

Outstanding Characteristics

-Excellent oil resistance
-Excellent chemical resistance against weak acids and alkalis.
-Suitable as finish coat in various epoxy paint systems
-Corrosion resistance in moderately to severely environment.

Surface Preparation

The surface must be clean, dry and free from any other foreign materials. Old primed surfaces must be mildly sweep blast to provide inter coat adhesion.

Technical Data

Finish	Semi-flat, semi-gloss
Color	Upon request
Solid by volume	52±3%
Specific Gravity	1.30±0.1 gr/cm³
Flash point	30 °C
Recommended D.F.T.	40-60 microns
Theoretical coverage	10-6.6 m²/kg Practical coverage depends on loss factor
Touch dry	3 hrs. at 20°C
Fully cured	7 days at 20°C
Thermal resistance	Max. 140°C (dry exposure)
Shelf life	12 months at 25°C
Package	20 & 4 liter containers

Application Details

Application method	Air/Airless spray, Brush, Roller
Surface temperature	10-50 °C
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	8 hrs. at 20°C
Recoat interval	Min 8 hrs. at 20°C Max 7 days at 20°C Recoating intervals related to later conditions of exposure
Nozzle orifice	0.017"-0.021"
Nozzle pressure	150 bar/2175 psi Airless spray is indicative and subject to adjustment
Application condition	Apply only on a dry and clean surface with a temperature above the dew point to avoid condensation. In confined spaces provide adequate ventilation during application and drying.

Note: Film thickness may be specified in another film thickness than indicated depending on purpose and area of use. This will alter the spreading rate and may influence the amount of thinning necessary, drying time and recoating interval.

Safety: Handle with care. Before and during use, observe all safety labels on packaging and paint containers. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Take precautions against possible risks of fire or explosions as well as protection of the environment.

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Neginzereh-pars Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Neginzereh-pars representative to obtain the most recent Product Data Information and Application Bulletin. The Neginzereh-pars Company warrants our products to be free of manufacturing defects in accord with applicable Neginzereh-pars quality control procedures.

02

NEGIN ZEREH PARS Co.

Industrial, Marine, Water Base, Architectural Paint

POLYAMIDE CURED EPOXY HIGH BUILD (SELF-PRIMER) INTERMEDIATE NZ-561

Product Description

NZ-561 is a two component, polyamide cured, and high build self-primer and intermediate epoxy coating.

Recommended Use

As a high build, high performance protective coating in aggressive environment over concrete or metal surfaces.

Outstanding Characteristics

-Excellent oil resistance
-Excellent chemical resistance against weak acids and alkalis.
-Suitable as finish coat in various epoxy paint systems
-Corrosion resistance in moderately to severely environment.

Surface Preparation

Surface should be clean, dry and free from oil, grease, dust and mill scale by solvent cleaning or high pressure fresh water and finally sand blasting up to Sa2½ or SSPC-SP10.

Technical Data

Finish	Flat, semi-flat
Color	Upon request
Solid by volume	65±3%
Specific Gravity	1.45±0.1 gr/cm³
Flash point	31 °C
Recommended D.F.T.	100-125 microns
Theoretical coverage	4.5-3.6 m²/kg Practical coverage depends on loss factor
Touch dry	3 hrs. at 20°C
Fully cured	7 days at 20°C
Thermal resistance	Max. 140°C (dry exposure) Non-Continuous Max. 150 °C
Shelf life	12 months at 25°C
Package	20 & 4 liter containers

Application Details

Application method	Air/Airless spray, Brush, Roller
Surface temperature	10-50 °C
Mixing ratio	Refer to the can label
Thinner/cleaner	NZT-500
Pot Life	8 hrs. at 20°C
Recoat Interval	Min 24 hrs. at 20°C Max 7 days at 20°C Recoating intervals related to later conditions of exposure
Nozzle orifice	0.017"-0.021"
Nozzle pressure	150 bar/2175 psi Airless spray is indicative and subject to adjustment
Application condition	Apply only on a dry and clean surface with a temperature above the dew point to avoid condensation. In confined spaces provide adequate ventilation during application and drying.

Note: Film thickness may be specified in another film thickness than indicated depending on purpose and area of use. This will alter the spreading rate and may influence the amount of thinning necessary, drying time and recoating interval.

Safety: Handle with care. Before and during use, observe all safety labels on packaging and paint containers. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Take precautions against possible risks of fire or explosions as well as protection of the environment.

The information and recommendations set forth in this Product Data Sheet are based upon tests conducted by or on behalf of The Neginzereh-pars Company. Such information and recommendations set forth herein are subject to change and pertain to the product offered at the time of publication. Consult your Neginzereh-pars representative to obtain the most recent Product Data Information and Application Bulletin. The Neginzereh-pars Company warrants our products to be free of manufacturing defects in accord with applicable Neginzereh-pars quality control procedures.

02