



OGDCL PAKISTAN:
OIL & GAS DEVELOPMENT
COMPANY LIMITED

KPD-TAY Compression Project (Phase-II)

ISSUED FOR TENDER

REV	DATE	DESCRIPTION	ORIG	CHKD	LE	QA	PM	LOCAL REPR.	PROJ. MAN
0	6-1-2022	ISSUED FOR TENDER	HB	MD	KM	MPM	MAS		
A	29-10-2021	ISSUED FOR REVIEW	HB	MD	KM	MPM	MAS		
REVISIONS			APPROVAL					CLIENT APPROVAL	



ENAR Petrotech Services (Pvt.) Limited ,
7-B , Sector 7-A , Korangi Industrial Area ,
Karachi Pakistan

TITLE:

SPECIFICATION FOR FENCING

PROJECT NO.
14-0258

DOCUMENT NO:

0258 – CA – 7017 – 0



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017

PAGE: 2 of 7

REV: 0

DATE: 6-Jan-2022

<u>S. No.</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1.0	GENERAL	3
2.0	MATERIALS	3
3.0	FITTINGS	5
4.0	ERECTION	6
5.0	PAINTING	7



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017

PAGE: 3 of 7

REV: 0

DATE: 6-Jan-2022

1.0 **GENERAL**

This specification describes the minimum requirements for fencing and gates. The external fencing shall be 2.50 metres to the top of the chain link fencing and 3.40 metres to the top line of barbed wire attached to the cranked extension arms at the top of the posts.

Double gates shall generally be 5 meters wide or as indicated on drawings.

2.0 **MATERIALS**

2.1 **Wire Generally**

All wire shall comply with the requirements specified for Grade A BS 4102.

2.2 **Chain Link Fencing**

The chain link fencing shall be woven from a wire with 3.55mm diameter to a mesh size of 50mm.

The chain link fencing fabric shall be one piece for the full height.

2.3 **Line Wire**

The line wire shall have a 3.55 mm diameter. Line wire shall be fixed to the chain link fencing with tying wire.

2.4 **Tying Wire**

Tying wire shall have a 1.40mm diameter.

2.5 **Barbed Wire**

Barbed wire shall be galvanized and made from high tensile steel wire complying with BS 4102. The wire shall be 2.50mm diameter with 1.90 mm diameter four point round barbs spaced at 150mm centers. Barbed wire shall be fixed to the extension arms with stirrup wires.

2.6 **Stirrup Wire**

Stirrup wire shall have a 2.5mm diameter.



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017
PAGE: 4 of 7
REV: 0
DATE: 6-Jan-2022

2.7 Posts & Struts

Posts and struts shall be $70 \times 70 \times 8$ angles to BS 4848: Part 4 of grade Fe 430 C or equivalent steel to BS EN 10 025. They shall be painted according to the Painting Specifications.

Extension arms shall be the same material as posts, butt welded to the post forming an angle of 45 degrees with the vertical line of the post, and shall be such a length as will increase the vertical height of the fence by 900 mm.

Extension arms on straining posts and gate posts shall be holed to take eyebolts for securing three lines of barbed wire.

2.8 Gate Posts

Gate posts shall be $139.7 \text{ mm} \times 4.5 \text{ mm}$ thickness circular hollow section to BS 4848 Part-2. They shall be painted according to the Painting Specifications.

Extension arms shall be as specified for posts and struts but shall be vertical, permitting the gate to swing 180 degrees. Open ends of circular hollow sections shall be closed with 4mm thick steel plate welded in position.

2.9 Gates

Gates shall be constructed of $48.3 \text{ mm} \times 3.2 \text{ mm}$ thickness circular hollow section to BS 4848 : Part 2 and of fully welded construction. Gates and fittings shall be painted according to the Painting Specifications.

Extension arms shall be formed by extending the hanging and shutting stiles vertically upwards to carry six lines of barbed wire. All open ends of circular hollow sections shall be capped with 4mm thick steel plate welded in position.

Chain link infilling shall match the chain link fencing and shall be fastened to the frame on all four sides with stretcher bars.

Each gate shall be supplied with sliding bolt of not less than $50 \text{ mm} \times 4 \text{ mm}$ flat secured in a frame of 4mm plate. For double gates the sliding bolts shall shoot into the adjacent gate. For single gates the locking bar shall shoot into a socket on the adjacent post.

All sliding bolts shall be fitted with a 6 lever padlock with hardened steel shackle pivot pin protected by an unweldable rivet and operated by a ping key.



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017

PAGE: 5 of 7

REV: 0

DATE: 6-Jan-2022

2.10 Fence & Gate Post Bases

Posts shall be set into concrete bases. The mass concrete shall be 1:2:4 mix by weight with 40mm maximum aggregate size and sulphate resisting cement. The top of the base shall slope up from grade level to the post to assure proper drainage.

3.0 FITTINGS

3.1 Fittings Generally

The fittings for fences and gates shall be painted according to the Painting Specifications.

3.2 Hair-pin Staples

Hair-pin staples for fastening down the bottom of chain link fencing shall have a 3.55mm diameter and shall comply with Grade A of BS 4102. The ends shall be bent outwards to secure anchorage.

3.3 Cleats

Cleats, one to each eyebolt, shall be of uniform size and shall consist of a mild steel angle not less than 38mm × 38mm × 5mm.

3.4 Eye Bolt Strainers

Eye Bolt strainers shall consist of bolts of 250mm overall length and not less than 9.5mm diameter with a welded eye at one end. They shall be treaded and fitted with nuts and washers. Two way eye bolt strainers shall have suitable ring nuts, fitted after the wires have been strained on one side.

3.5 Stretcher Bars

Stretcher bars shall consist of mild steel flat 20mm × 4mm. They shall be secured to the cleats by M8 bolts.

3.6 Droppers

Droppers for barbed wire shall be of mild steel not less than 20mm × 4mm thick with 38mm × 4.85 mm half round staples for fastening the barbed wire to them.



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017

PAGE: 6 of 7

REV: 0

DATE: 6-Jan-2022

4.0 ERECTION

4.1 Clearing

Fence lines shall be cleared sufficiently to permit fences to follow the general contour of the ground.

4.2 Posts

Straining posts shall be provided at all ends and corners of fences, at changes in direction or acture variations in levels, and at intervals not exceeding 30 metres on straight lengths of fences. Intermediate posts shall be spaced at regular intervals not exceeding 3 metres.

4.3 Struts

Struts shall be securely fastened to the top of the straining post and to the bottom of the adjacent intermediate posts with galvanized steel M123 bolted connections.

4.4 Line Wires

There shall be three evenly spaced rows of line wire. The bottom wire shall be 50mm from the ground and each line wire shall be strained tightly by means of eyebolt strainers at each straining post. Each line wire shall be secured to each intermediate post by a wire stirrup passed through a hole in the post and secured to the line wire by three complete turns on each side of the post.

4.5 Fixing Chain Link Fencing

The chain link fencing shall be strained between each pair of straining posts and secured to each straining post by means of a stretcher bar. The fencing shall be attached to the top and bottom line wires by tying wires spaced 150mm apart and to the middle line wire by tying wires spaced 450mm apart.

The bottom 300mm of the fencing shall then be buried vertically and the ground surface reinstated. At bases hair pin staples shall be threaded through the bottom row of mesh and grouted to a depth of 150mm.

4.6 Fixing Barbed Wire to Extension Arms

Three lines of barbed wire shall be provided. The lowest line shall not be more than 150mm above the top of the chain link and others equally spaced to a position not exceeding 50 mm below the top of the extension arms. The wires shall be attached by eyebolts to the straining extension arms and shall be properly strained. On intermediate posts the wires shall be secured with stirrup wires. The barbed wires shall be fitted



OGDCL (PAKISTAN)
KPT-TAYCOMPRESSION PROJECT
SPECIFICATION FOR FENCING

DOC NO: 0258-CA-7017

PAGE: 7 of 7

REV: 0

DATE: 6-Jan-2022

with one dropper at the center of each bay, secured to the wires so they cannot be bunched together.

5.0 PAINTING

The painting shall be done according to the Specifications for Painting. The painting works to be performed shall include all necessary steps like supply of materials, surface preparation, protection of other works, application of primers, intermediate and top finish coats, cleaning of the working area as well as intermediate and final inspection works.