

PORT INFORMATION

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Chapter One: General

About Vale

Who We Are

Vale is a global mining company headquartered in Brazil with operations in more than 30 countries around the world. Spread over five continents, the company employs a workforce united by a common goal: to transform natural resources into prosperity and sustainable development. Committed to quality of life and environmental preservation in all of our regions, we believe that we can grow together sharing value and always respecting the limits of our planet.

With over 70 years of experience, Vale is a pioneering mining company that works with passion to transform mineral resources into essential ingredients of people's everyday lives. The result of our work can be found in many things beginning with the cars we drive to the mobile phones we rely on to stay connected with one another. We are leaders in the production of iron ore and pellets, key raw materials for the steel industry and the largest producer of nickel worldwide. Our portfolio also includes coal, copper, fertilizers, manganese and ferroalloys among other natural minerals. In addition, we operate in the logistics, steel, energy and fertilizer sectors.

Vale in Oman

With an initial investment of US\$1.25 billion dollars and a nominal production capacity of 9 million tons of iron ore pellet per year, the company employs advanced technologies including an innovative environmental management system which involves control and monitoring actions, all in compliance with local laws and regulations. The project significantly contributes to the socio-economic development, generating more than 1,500 direct jobs.

Operating in Oman, we aim to strengthen our position as a leading mining company and foster our business relations in the region through our people. Vale's multicultural working environment revolves around diversity, acceptance, tolerance, respect and equality. We always seek to understand and respect the local culture and traditions for we believe that this is the only way to bring our mission to life. The essence of the organization is expressed by the people who build it and their approach towards daily events, guiding its activities based on ethical and moral standards.

About Sohar Port and Free Zone Company (Sohar Port)

Sohar is a deep sea port in the Middle East situated in the Sultanate of Oman, 220km northwest of its capital Muscat. The management of this industrial port lies with Sohar Port and Freezone Company, a 50/50 joint venture between the Government of Oman and the Port of Rotterdam. The original agreement between the two parties was signed in 2002 and included a port area of 2100 ha and for Sohar Port Company to manage and develop the port until 2025. Today, the Port is fully operational with state-of-the-art facilities.

Located just before the Strait of Hormuz, Sohar Port is within easy reach of the booming economies of the Gulf and the Indian subcontinent and having deep waters to receive large ships for bulk and other trades. Sohar Port houses three clusters: logistics, petrochemicals and metals. Vale premise is situated in metal sector at the northern part of Sohar Port area.

Vale in Oman entered in to an agreement with Sohar Port to build a jetty terminal with exclusive rights to Vale to equip and operate it. In this arrangement Sohar Port looks after all nautical aspect of the terminal (port marine services) and Vale handles all other operations.

Vale Oman Distribution Center

Pictorial Overview



Chapter Two: Port Information

Arrival and Approach

Laden ship with Sohar cargo needs to give 12/ 10/ 8/ 6/ 4/ 3/ 2/ 1 day ETA notices to Vale Terminal. Ship calling Sohar to load Vale cargo needs to give 4/ 3/ 2/ 1 day ETA notices to Vale Terminal. Arriving ship’s Master or the Ship’s Agent shall contact the Harbour Master Office at least four (4) hours prior to arrival with an updated ETA for reconfirmation to enter the Sohar Port Area.

Pilot boarding position: 24°33.3’N, 056°37.7’E. (For Valemax 24°38’N, 056°40’E)
 Pilot boarding area is as indicated in the nautical charts. Pilot boards by pilot boat. The approach to the Port is through the Approach Channel, marked with buoys as indicated in the nautical charts. Recommended charts: Omani chart no.1, 3505, 257. Admiralty chart 2851 may also be used.

The Approach Channel is one-way traffic. Depending on ship size, ship manoeuvrability, shipping traffic or other relevant facts and circumstances, the Harbour Master may designate the Approach Channel for two-way traffic. Vessels leaving the Port shall, in general, have the right of way over Vessels entering the Port.

There is no tidal stream. Weak surface current (generally 0.5 knot or less) may be present but not synchronised with the tide. Sea water density is 1.025 in winter and in summer (April to November) it is a little lower— from 1.022 to 1.024.

LAT	HAT	MHWS	MLWS	MHWN	MLWN	MSL
Chart datum	3.4m	2.9m	0.9m	2.5m	1.5m	2.0m

Following depths at Chart datum (CD) are maintained by Sohar Port:

Approach channel	23m
Turning basin outer	23m
Unloading quay (Berth- 22)	25m
Loading quay west part (Berth- 24)	16 m
Loading quay east part (Berth- 23)	19.5 m

Anchorage

The total area for anchorage is divided into 3 adjacent segments A (west), B (middle), C (east) at locations indicated in the Nautical Charts.

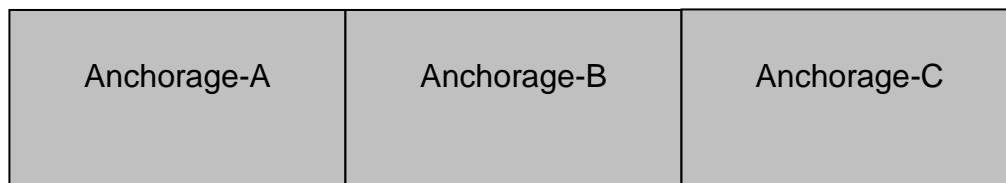
Area-A is assigned for ships awaiting berthing instruction. This is for short period stay only.

Area-B is assigned for long period stay, such as laid up ships, ships under repair or ships being replenished etc.

Area-C is assigned for transshipment operations, such as double banking operation for oil and dry bulk cargo, bunkering etc.

Following is a co-ordinated arrangement of the anchorage area:

24°37'N, 056°38'E	24°37'N 056°40'E	24°37'N 056°42'E	24°37'N 056°44'E
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24°34'N 056°38'E	24°34'N 056°40'E	24°34'N 056°42'E	24°34'N 056°44'E
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About Berthing

1. Berthing procedure: When a ship enters port, a mooring plan is made by terminal in accordance with the rules and procedures agreed between terminal and Sohar Port. The mooring plan is relayed to the ship and Sohar Port through an agent well before pilot boards. Tugboats join the ship near the entrance of the channel. Mooring linesman heave on messenger line using powered capstan mounted over mooring hooks. One mooring boat is available and may be used if pilot requires it.
2. At present Port of Sohar has 2 tugs of 45 BP (Svitzer Shinas and Svitzer Sohar), and 3 tugs of 65 BP (Svitzer Liwa, Svitzer Hormuz, and Svitzer Al Khabourah) at all times. The number of tugs for Vessels shall be determined by the Master of the Vessel, in co-ordination with the pilot.

Contact Details:

- [A] Sohar Port: Port call sign "Sohar Port Control". Radio: VHF channel 71 & 13.
Phone: +968 26 852777, 99342699
- [B] Terminal Office: Radio: VHF Ch 16, 71. Phone: +968 26759552.
- [C] Ship loader: In touch with ship inspector on deck, Vale Internal UHF walkie talkie.
- [D] Ship unloader: In touch with ship inspector on deck, Vale Internal UHF walkie talkie.
- [E] Emergency Numbers:
Fire: +968 26759555
Medical: +968 26759555
Terminal Security: +968 26759443, 26759444
Harbour Police: +968 26840099

Medical

Vale Terminal has its own medical clinic within the project to handle routine and emergency medical and employee health issues. SIPC also has a similar clinic. Depending on the severity of a patient's medical needs, they may be transferred to city hospital for further medical care.

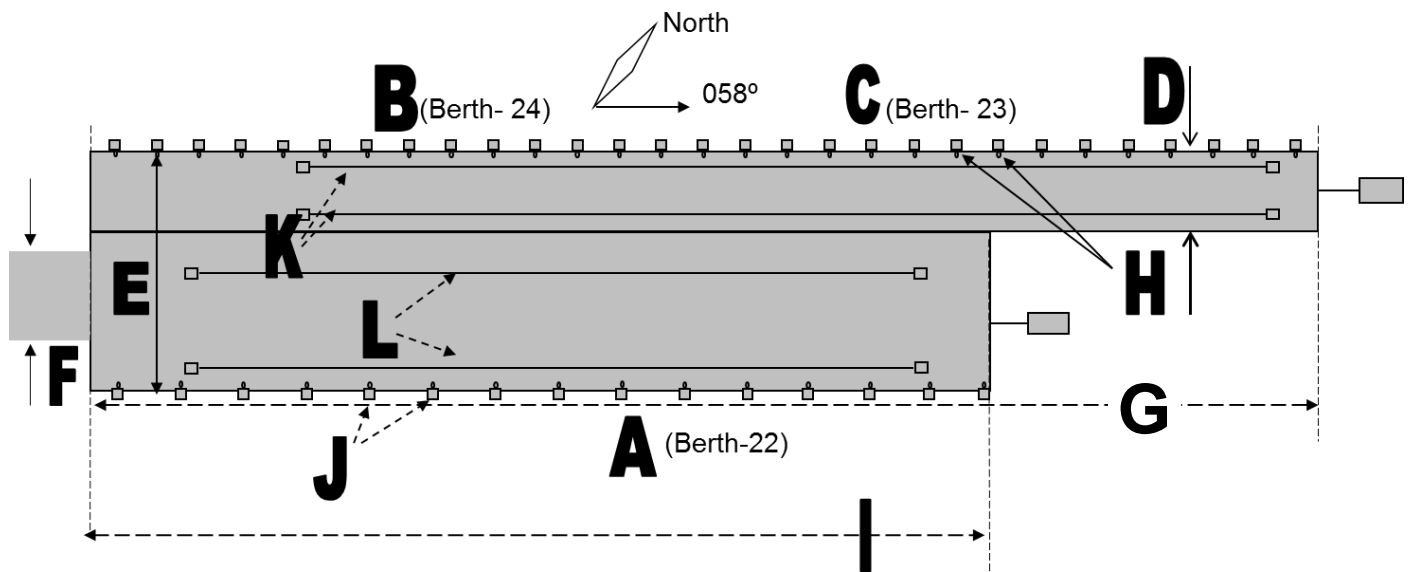
Chapter Three: Terminal Operation

Vale Oman Terminal is designed to handle the largest (DWT about 400,000) bulk carriers in the world. Alignment of the jetty platform is 058° -- 238° , and jetty deck height is 9.5m above chart datum. South side of the jetty is for unloading and the North is for loading. South Quay has 3 unloaders with a maximum rate of 3000TPH each, and North Quay has 1 loader with a maximum rate of 10000TPH.

Figure I—General Orientation of the Terminal



Figure II: The Bulk Terminal



A Berth 22 for unloading all ship sizes

G Loading quay 599.7m long

B Berth 24 for loading Handymax, Supramax, Panamax, Post Panamax.

H Loading quay mooring hook and fender spacing every 20m

C Berth 23 for loading Capesize & smaller ships

I Unloading quay 437.1m long

D Max width of loading quay 21.5m

J Unloading quay mooring hook and fender spacing every 30m

E Max width of jetty platform 64.5m

K Loader rail starts 25.4m from quay head seaside, travels 466.7m.

F Trestle width 24.2m

L Unloader rail starts 36.0m from quay head seaside, travels 349.2m

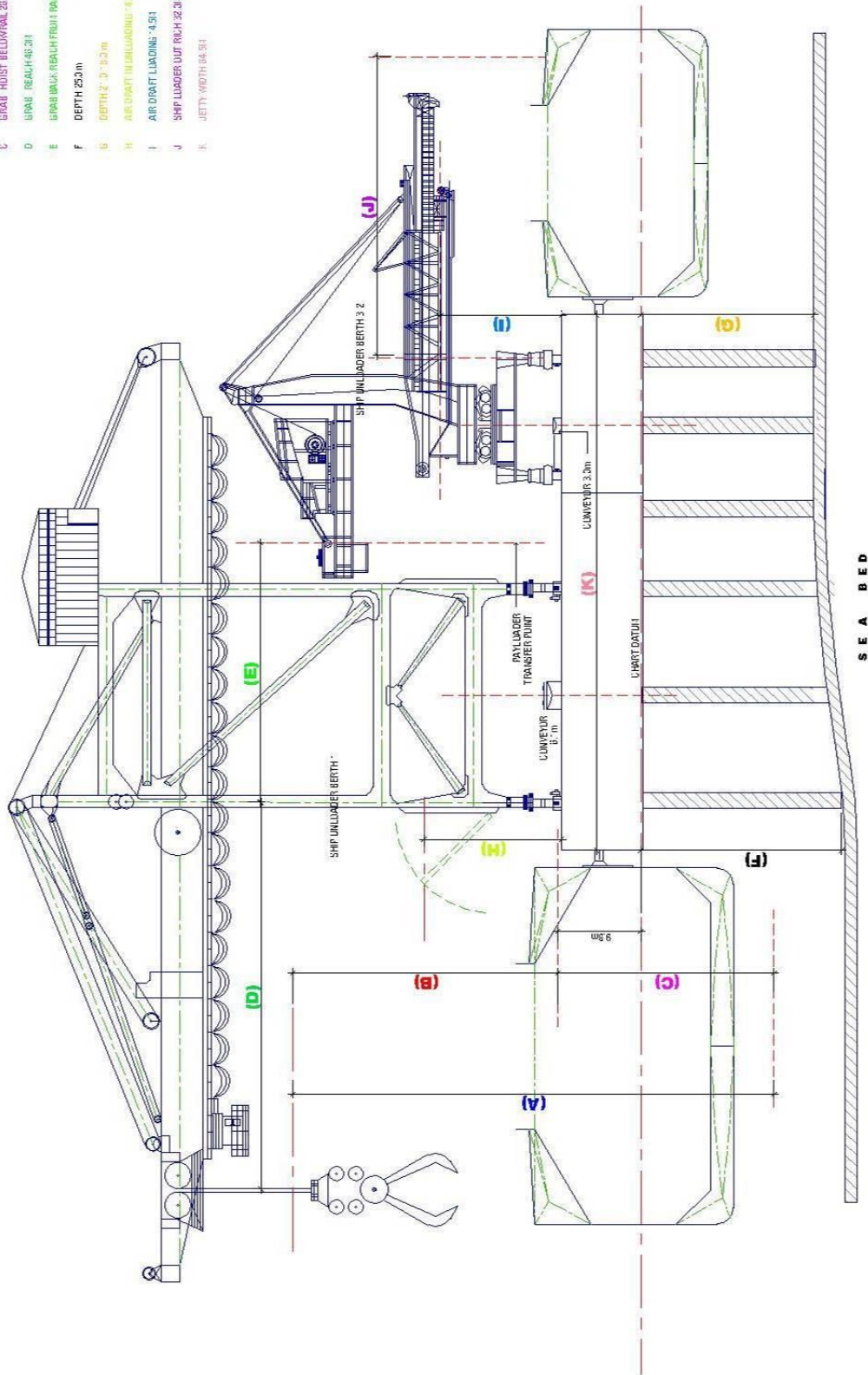
Figure III: Jetty Cross Section Dimensions (See next page diagram)

(A) Total grab hoist range:	58 m
(B) Grab hoist above rail:	32 m
(C) Grab hoist below rail:	26 m
(D) Grab outreach from outer rail:	46 m
(E) Grab back reach from outer rail:	33 m
(F) Depth at berth-22:	25 m at chart datum
(G) Depth at Berth-23 & Berth-24:	19.5 m & 16 m at chart datum
(H) Air draft of unloader from Jetty platform:	14 m
(I) Air draft of loader from Jetty platform:	14.5 m (boom horizontal position)
(J) Ship loader outreach from outer rail:	32.3 m
(K) Total width of Jetty platform:	64.5 m

Vale Oman Distribution Center

TERMINAL CROSS SECTION

- INDEX
- A GRAB HOIST
 - B GRAB HOIST ANCHORAGE 32.314
 - C GRAB HOIST BELLOWS/RAIL 20.314
 - D GRAB REALM 48.201
 - E GRAB WALK REALM/FRUIT RAIL 39
 - F DEPTH 253m
 - G DEPTH 2 - 3 - 0.31m
 - H GRAB CRANIT BELLOWS/RAIL 4.311
 - I AIR DRAFT LIAISON 4.511
 - J SHIP LOADER/OUT RICH 32.314
 - K JETTY WIDTH BASE



Ships Arriving On Ballast

In a regular situation, as established by the joint procedure between Vale Terminal and Sohar Port Authority, all ships have to berth on the starboard (stbd) side, except for Cape size ships. Cape size ships will berth nearest to the approach channel port side. Loading is done by one gantry loader with telescopic boom and horizontal slew.

	Berth-23	Berth-24
Ship's size	Large Cape size, Post Panamax, Panamax, Supramax, Handy size	Post Panamax, Panamax, Supramax, Handy size
Depth	19.5m at chart datum	16.0m at chart datum
Max. draft	19.0m SW	16.0m SW
Max. air draft	23.0m	23.0m
Min. displacemt. Max. displacemt.	43500 MT 250000 MT	43500 MT 146000 MT
Loading rate	<ul style="list-style-type: none"> •Average rate 6000 TPH •Peak rate may reach up to 10000 TPH sometimes. 	<ul style="list-style-type: none"> •Average rate 6000 TPH •Peak rate may reach up to 10000 TPH sometimes.
Mooring	Cape: 4+2+2 fwd & aft Post Panamax: 3+2+2 fwd & aft Panamax: 2+2+2 fwd & aft Handy size: 2+2+2 fwd & aft	Post Panamax: 3+2+2 fwd & aft Panamax: 2+2+2 fwd & aft Handy size: 2+2+2 fwd & aft

Vessels scheduled for loading must present their cargo hold **washed, cleaned** and ready on arrival for inspection and loading. Ships arriving on ballast must have documented evidence that all ballast to be pumped out at Sohar Port has no oil, toxin, pathogen and/or sediment.

Port of Sohar is within Restricted Sea Area (RSA) and ships must produce the ROPME ballast report (**R**egional **O**rganisation for **P**rotection of **M**arine **E**nvironment) to Vale Terminal prior arrival port, so that pumping out ballast water can be permitted/ approved. The form is available with local shipping agents. Refer IMO circular annex: MEPC 60/ INF.2

Notice of readiness is to be tendered when vessel enters Sohar Port limit.

Arrival Laden Ships at Berth - 22

In a regular situation, as established by the joint procedure between Vale Terminal and Sohar Port Authority, laden ship is alongside on starboard side and three gantry type unloaders with grab work simultaneously.

	Berth-22
Ship's size	Valemax, VLOC, Cape size, Panamax, Handy size
Depth	25.0m at chart datum
Max. draft	23.0m
Max. air draft	23.0m
Min. displacemt.	43500 MT
Max. displacemt.	458600 MT
Unloading rate	Average unloading rate 6000 tph using 3 unloaders for iron ore. For light weight cargo (anthracite & others) average rate 1500 tph using 2 unloaders.
Mooring	Valemax and VLOC: 4+4+2 fwd& aft Cape size: 4+2+2; Panamax & Handy size: 2+2+2 fwd& aft

Laden ships are requested to clear their cargo bilge water en route so that the bottom cargo is dry and maintain a record of pumped out water quantity. Same is required to be submitted upon arrival.

All ships are requested to provide their cargo sequence and stowage plan at least 7 days prior to arrival. Vessels on short voyages must provide the same at least 1 working day prior to arrival. Notice of Readiness is to be tendered when the vessel enters Sohar Port limit.

Abort Situation

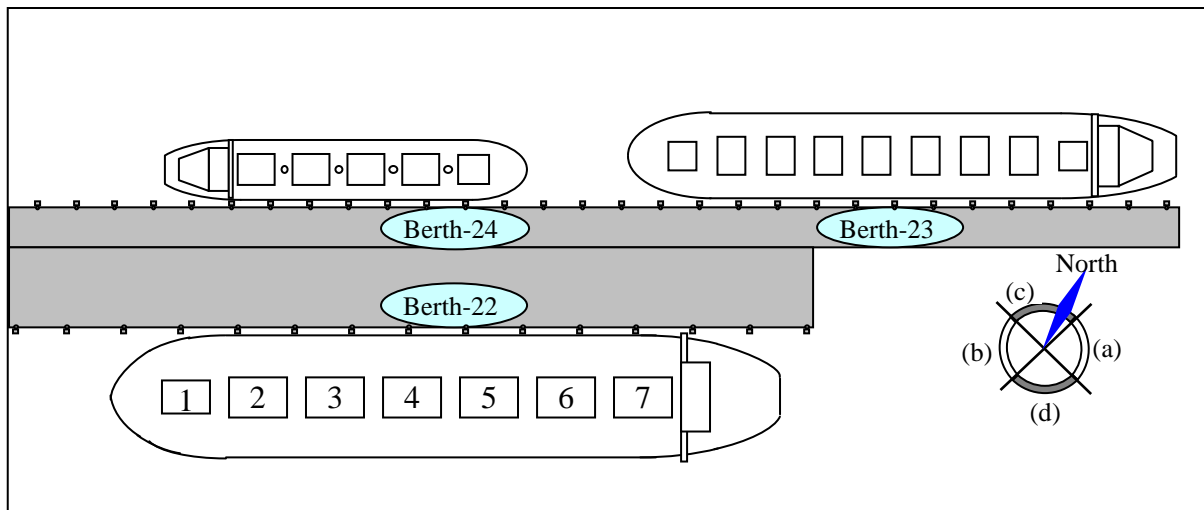
It may be necessary for a ship to leave the berth in case of any contingency. The main contingency recognized is wind and related sea and swell. The risk situation is categorised as normal, alarm level-1, and alarm level-2.

In normal conditions, weather, sea and mooring rope tensions will be sensed and recorded by Mampaye system.

At alarm level-1, the terminal will personally monitor the weather parameters and mooring rope tension readings. Also the terminal, ship and Port Authority will jointly evaluate the chance of further deterioration of weather conditions and whether the ship has to stop its cargo operations and leave berth.

At alarm level-2, abort situation is confirmed. Accordingly the terminal will stop all cargo operations and the ship must leave the berth with the assistance of port services.

Categorizing weather risk situation:



Direction of wind and wave are divided into 4 sectors:

- a) 90° sector on seaside end of terminal.
- b) 90° sector on landside end of terminal..
- c) 90° sector on loading side of terminal
- d) 90° sector on unloading side of terminal.

Wind and wave from any sector will differently affect the loading and unloading sides, as shown in below tables. In the table on the next page, “*Real risk, cargo work OK, no berthing, consult for aborting*” correspond to alarm level-1. “*High risk, abort all operation, clear off the ship*” correspond to alarm level-2.

UNLOADING QUAY CONDITION	SECTOR- A	SECTOR-C	SECTOR-B	SECTOR-D
No risk, safe for cargo work & manoeuvre	Wind force 1 to 3, Sea & swell <1m	Wind force 1 to 3, Sea & swell <0.5m	Wind force 1 to 4, No swell in this sector	Wind force 1 to 4, Sea & swell <1m
Potential risk, continuous monitor, cargo work & shipping manoeuvre OK	Wind force 4, Sea & swell about 1.5m	Wind force 4, Sea & swell about 1m	Wind force 5, No swell in this sector	Wind force 5, Sea & swell about 2m
Real risk, cargo work OK, no berthing, consult for aborting	Wind force 5,6, Sea & swell >2m	Wind force 5, Sea & swell 1m to 2m	Wind force 6, No swell in this sector	Wind force 6, Sea & swell >2m
High risk, abort all operation, clear off the ship	Wind force more than 6	Wind force 6, Sea & swell 2m	Wind force 7 & above	Wind force 6, Sea & swell 2m

LOADING QUAY CONDITION	SECTOR- A	SECTOR-C	SECTOR-B	SECTOR-D
No risk, safe for cargo work & manoeuvre	Wind force 1 to 3, Sea & swell <1m	Wind force 1 to 4, Sea & swell <1m	Wind force 1 to 4, No swell in this sector	Wind force 1 to 3 Sea & swell <0.5m
Potential risk, continuous monitor, cargo work & shipping manoeuvre OK	Wind force 4, Sea & swell about 1.5m	Wind force 5, Sea & swell about 1.5m	Wind force 5, No swell in this sector	Wind force 5, Sea & swell 1m
Real risk, cargo work OK, no berthing, consult for aborting	Wind force 5,6, Sea & swell >2m	Wind force 5 to 6, Sea & swell <2m	Wind force 6, No swell in this sector	Wind force 6, Sea & swell 1.5m
High risk, abort all operation, clear off the ship	Wind force more than 6	Wind force 6+ Sea & swell >2m	Wind force 7 & above	Wind force 6+ Sea & swell >2m

Chapter Four: For Ship's Compliance – General

1. All Vessels calling at the Port of Sohar must have proper insurance that sufficiently covers any third party liability, including liabilities resulting from Dangerous Goods or oil spills, spills of chemicals or other toxic or hazardous materials. The Vessel must have on board written proof of such insurance which shall be provided to the Harbour Master upon request.
2. All Vessels shall have valid original certificates on board. After berthing, Terminal will collect copies of certificates from the ship as per the standard list of Vale in Oman. (e-copies preferred). Original Certificates may also be inspected by Sohar Port Authority if deemed necessary.
3. The Master of a Vessel shall be held responsible for the behaviour of the crew and for the strict observance of Omani Law, particularly during Ramadan; and those laws concerning the sale, possession or consumption of drugs or alcohol.
4. For departure, the Master or the Ship's Agent must give at least one hour notice to Port Control for pilot boarding and sailing. Outbound pilot will board after Port clearance is issued by the Harbour Master. Such port clearance may be withheld for any violation of the provisions of these Rules and Regulations of the Port Area, or for any legal cause or restraint duly ordered by a court in Oman, or for non payment of Port Dues.
5. Sohar Port Authority provides all Rules and Regulations on their website. This has the same effect of Omani Law as enforced by Royal Decree of Oman. Compliance is mandatory.
6. Before arriving at the Port of Sohar, all ships must acknowledge receipt of this document "Vale Sohar Terminal information Handbook" to Vale Bulk Terminal. The acknowledgement will imply the Master's assurance for seaworthiness, cargo worthiness, adequacy of performance and safe operational conditions. This assurance covers the main and auxiliary engines, cargo holds, hatch covers (including opening closing) and other necessary fittings in the cargo space, ballast system, deck gears, oil spill control systems including SOPEP, crew training, pumps, pipes, valves and also that coverage apply to any loss, damage and delay directly and/or indirectly related with any operational deficiency that it may arise from the ship.

Chapter Five: For Ship’s Compliance – Safety

1. The Master of any Vessel shall retain on board sufficient crew to operate the Vessel in a safe manner at all times.
2. The Vessel is responsible for providing a safe and well secured access ladder. Ladder must be attended round the clock and adjusted from time to time by the ship’s staff.
3. A Vessel shall use adequate mooring ropes to the satisfaction of Harbour Master. Mooring ropes must be in good condition (in the opinion of the Harbour Master). Upon mooring of any Vessel, the Vessel shall be responsible for placing the appropriate number of traps on the hawsers to prevent ingress and egress of rats. Mooring lines must be attended round the clock and adjusted time to time by ship’s staff.
4. Written permission is a must for carrying out any work/ test/ survey/ inspection/ drill involving safety issues while alongside. There is a standard work permit of Sohar Port that is jointly endorsed by Sohar Port, Ship, Terminal, and Agent before commencing such work. The work permit can be arranged through Agent.
5. In addition to the above written report, ship must communicate the following issues to the Sohar Port Control:

Issues to be reported	Via
Lowering boats and rafts	VHF Ch 71/16
Under water inspection	VHF Ch 71/16
Spills	VHF Ch 71/16 or telephone
Collision/Grounding	VHF Ch 71/16 or telephone
N.U.C. in situations that may endanger safety of shipping	VHF Ch 71/16 or telephone

6. Shipmaster has to submit a full report in writing within 24hr and in any case before departure, for any accident/incident involving loss of life, serious injury to any person, grounding, collision, pollution or any other damage to property, or if such Vessel sustains any material damage affecting her seaworthiness or efficiency.
7. “NO”s:
 - a. No naked light on deck and other exposed area.
 - b. No spark from funnel.

- c. No walking under working equipment or running machinery on the jetty (loader, unloader, conveyor).
8. Ship's crew is required to use PPE while on the Terminal: - safety shoe, helmet, safety goggle. Additionally life jacket in case of reading draft at jetty or by using boat.
9. Ship's husbandry: Vale Bulk Terminal Sohar has no provision of handling oil on jetty. Ship can receive bunker, lubrication oil and other oils only from sea side while at Vale Terminal berth. Stores, spares, fresh water supply etc. can be arranged at jetty through various agents. However, any transport vehicle related to these activities must follow the safe practices at Terminal. The organising agent is familiar with the safe practices and will coordinate accordingly. For crew repatriation only Terminal approved vehicles will be used, which are conversant with safe practices.

Chapter Six: For Ship's Compliance – Environment

1. No operational pollution from ship is allowed. The discharge or spill, intentionally or unintentionally, of any substance in the Sohar Port Area is prohibited. Any incident of pollution will be deemed as an act of deliberation by the ship.
2. The ship will not emit black smoke or suspended particles while alongside.
3. Every incidence and violation of this prohibition must be immediately reported to the Harbour Master. The person or entity responsible for any pollution will be held responsible for all costs of the cleanup operations and any resulting damage within the Port Area.
4. Suspected pollution of any kind, whether from a Vessel or sighted in the vicinity, must be immediately reported to the Harbour Master with a full written report.
5. All contents of machinery bilge and cargo area bilge to be retained on board. A future shore reception facility for oily water waste and sludge is under consideration by Port of Sohar.
6. All ships can dispose of their garbage (Annex V items) at appropriate locations on the jetty. There is a mandatory service charge by Sohar Port for garbage clearing. Vale Terminal urges all ships to make use of it.

7. All ships calling at the Port of Sohar are allowed to discharge only “clean ballast”—no oil, no toxin, no pathogen, no sediment. Port of Sohar is within the Restricted Sea Area (RSA) as per IMO as well as Gulf Cooperation Council (GCC) Authority.
8. All Vessels shall comply with IMO Marine Environment Protection Committee Guidelines to implement Ballast Water Management Program (Ballast Water Exchange in the open sea) IMO Res. A 868 (20). If deemed necessary, Vale Terminal may refer to documentary evidence on board and collect ballast sample from ship for laboratory analysis.
8. Sewage disposal—not permissible without an approved treatment plant in operational condition. Documentary evidence is essential.
9. In the unfortunate situation of any ship violating environmental norms there will also be a monetary penalty imposed by Sohar Port in addition to all costs of the cleanup operations and any resulting damages within the Port Area.
10. Vale Terminal has an “Oil Pollution Emergency Plan” and maintains a stock of oil spill gears. Sohar Port Authority as a landlord also has its own oil pollution plan. Accordingly, the Port has appointed Oman Petro Environmental Services Company LLC (OMAN PESCO) as a specialized service provider regarding oil spill control, containment, clean up and disposal, including any technical expertise. OMAN PESCO provides service to individual industries within Sohar Port jurisdiction on chargeable basis.

Chapter Seven: For Ship’s Compliance – Security

1. All Vessels must comply with and observe all ISPS Code requirements for vessels and port facilities. A vessel shall have its certificate of security available on board for inspection by the Vale Terminal.
2. Port of Sohar complies with ISPS code. There is an overall PSO for total area of jurisdiction of SIPC. There is also individual PFSO for Vale’s Terminal.
3. All Parties shall co-operate in an overall SIPC Security Plan, as well as in an SIPC Emergency Plan according to Good International Practices.
4. Vale Terminal will not consider a declaration of security except for the situations prescribed in ISPS code.