



SANDHYAFLEX

ISO 9001:2015 certified company

Road and Rail Tanker Oil Hose

TECHNICAL DATASHEET

SANDHYAFLEX Road & Rail Tanker Oil Hose is a heavy-duty, flexible, and durable industrial hose specifically engineered for the safe loading and unloading of petroleum products, diesel, gasoline, lubricating oils, fuel oils, kerosene, biodiesel, and other petroleum-based liquids in road tanker, railway tanker, terminal, depot, refinery, and industrial fuel transfer applications. Manufactured using high-quality oil-resistant natural and synthetic rubber compounds reinforced with high-strength textile plies and steel wire helix reinforcement, these hoses are designed to provide excellent pressure resistance, vacuum capability, flexibility, chemical compatibility, and long-term operational reliability under demanding service conditions.

Designed to ensure safe and efficient fuel transfer while minimizing operational downtime and maintenance requirements, Sandhyaflex Road & Rail Tanker Oil Hoses provide superior oil resistance, excellent flexibility, high burst strength, and dependable performance. These hoses are widely used in petroleum terminals, fuel depots, refineries, road tanker fleets, railway tank wagons, marine fuel facilities, industrial fuel handling systems, and bulk liquid transfer operations where safety, durability, and operational efficiency are essential.

SANDHYAFLEX INDIA PVT LTD has established itself as a trusted manufacturer of industrial hose solutions in India. Utilizing advanced hose-building technology, precision reinforcement processes, and carefully selected raw materials, Sandhyaflex Road & Rail Tanker Oil Hoses are manufactured to deliver consistent quality, excellent dimensional stability, superior pressure and vacuum performance, and dependable long-term service.

Overcoming Challenges, Delivering Excellence:

Petroleum transfer systems frequently operate under fluctuating pressures, vacuum conditions, continuous flexing, outdoor exposure, hydrocarbon contact, mechanical handling, and demanding operating environments. Conventional low-quality hoses often suffer from swelling, cracking, reinforcement degradation, leakage, reduced flexibility, and premature wear when exposed to petroleum products.

To address these challenges, SANDHYAFLEX Road & Rail Tanker Oil Hoses are manufactured using specially formulated oil-resistant rubber compounds reinforced with high-tensile textile plies and steel wire helix reinforcement that provide excellent resistance to petroleum products, pressure handling capability, vacuum performance, flexibility, fatigue resistance, and environmental durability. The robust construction ensures reliable fuel transfer, improved operational efficiency, reduced downtime, and extended service life.

By delivering superior durability and dependable performance, SANDHYAFLEX Road & Rail Tanker Oil Hoses have become the preferred choice for petroleum companies, fuel distributors, transport operators, terminal operators, refinery contractors, industrial users, and maintenance professionals worldwide.

Key Features:

- Manufactured using high-quality oil-resistant natural and synthetic rubber compounds
- Reinforced with high-strength textile plies and steel wire helix
- Suitable for petroleum product loading and unloading operations
- Excellent resistance to diesel, petrol, kerosene, fuel oil, and lubricants
- Excellent vacuum resistance
- High working pressure capability
- Excellent burst pressure performance
- Superior flexibility and handling characteristics
- Resistant to weathering, moisture, ozone, and UV exposure
- Smooth bore for efficient flow characteristics
- Excellent kink resistance
- Durable steel wire reinforced construction
- Static dissipating construction available
- Available in multiple diameters and pressure ratings
- Suitable for road tanker and railway tanker applications
- Low maintenance requirements
- Cost-effective fuel transfer solution
- Long service life under demanding operating conditions

Applications:

- **Road Tankers:** Loading and unloading of petroleum products from fuel tank trucks.
- **Rail Tank Wagons:** Transfer of fuels and petroleum products between railway tankers and storage systems.
- **Petroleum Terminals:** Bulk fuel handling and distribution operations.

- **Oil Refineries:** Transfer of refined petroleum products and fuels.
- **Fuel Depots:** Safe fuel loading and unloading systems.
- **Aviation Fuel Facilities:** Fuel handling and distribution operations.
- **Marine Fuel Transfer:** Transfer of fuel oils in port and marine facilities.
- **Industrial Plants:** Supply and transfer of diesel and fuel oils.
- **Bulk Liquid Handling:** Transportation of hydrocarbon-based liquids.
- **Petrochemical Facilities:** Transfer of petroleum derivatives and process oils.
- **Storage Tank Farms:** Connection between tanks, pumps, and loading systems.
- **Energy Infrastructure Projects:** Fuel distribution and transfer applications.

History of Road & Rail Tanker Oil Hoses:

- **Early 1900s** – Basic rubber hoses were used for fuel and oil transfer applications.
- **1930s** – Textile reinforcement improved hose strength and durability.
- **1950s** – Oil-resistant rubber compounds enhanced compatibility with petroleum products.
- **1960s** – Steel wire helix reinforcement improved vacuum resistance and flexibility.
- **1970s** – Advanced reinforcement technology increased pressure capabilities.
- **1980s** – Improved manufacturing processes enhanced dimensional stability and service life.
- **1990s** – Better synthetic rubber formulations improved oil, ozone, and weather resistance.
- **2000s** – Growth in petroleum logistics increased demand for specialized tanker hoses.
- **2010s** – Modern hose-building technologies improved safety, reliability, and fuel compatibility.
- **2020s** – Advanced Road & Rail Tanker Oil Hoses provide superior oil resistance, pressure handling capability, safety, and long-term durability across petroleum transfer applications worldwide.

Dimensions:

Nom. Bore Size in (mm)	Tolerance on Nom. bore (mm)	Min. Bending Radius in mm 1A & 1B 2A & 2B 3	Max. mass per metre of Hose for type Kg/m 1A 1B 2A 2B 3	For all types Min. thk. of Lining mm Min. thk. of cover mm
25.0	±1.25	-- 190	---- 1.28	2.00 1.25
31.5	±1.50	130 190 230	1.05 1.35 1.80 1.95 1.65	2.00 1.25
38.00	±1.50	155 230 280	1.35 1.65 2.10 2.40 1.88	2.00 1.25
50.00	±1.50	205 305 360	1.88 2.25 2.78 3.00 2.25	2.00 1.25
63.00	±1.50	255 380 -	2.25 3.00 3.68 4.13 -	2.00 1.25
75.00	±2.50	305 460 -	3.00 3.75 5.00 5.25 -	2.00 1.25
100.00	±3.00	410 560 -	4.13 4.80 6.75 8.25 -	2.00 1.25

Colours and Their Applications:

For Sandhyaflex Road & Rail Tanker Oil Hoses, colours are primarily used for product identification, fuel classification, pressure rating identification, safety coding, inventory management, and customer-specific requirements. The pressure handling capability, oil resistance, flexibility, durability, and service life are determined by the rubber compounds and reinforcement construction rather than the colour.

Colour	Typical Application
Black	Standard petroleum transfer and tanker loading applications
Blue	Industrial oil and fuel transfer systems
Red	High-pressure fuel transfer and safety identification
Yellow	Safety marking and tanker loading operations
Green	Biodiesel and alternative fuel handling applications
Orange	Heavy-duty petroleum and industrial fuel transfer
Grey	Refinery, depot, and general-purpose oil transfer
Custom Colours	Available as per customer specifications and project requirements

Materials:

The **Sandhyaflex Road & Rail Tanker Oil Hose** shall be manufactured using high-quality oil-resistant natural and synthetic rubber compounds, high-strength textile reinforcement fabrics, steel wire helix reinforcement, anti-static conductive materials, bonding agents, processing additives, pigments, and weather-resistant cover compounds specifically engineered to provide excellent oil resistance, pressure resistance, vacuum capability, flexibility, abrasion resistance, and long-term durability in petroleum product transfer applications.

The hose construction shall consist of a smooth oil-resistant rubber inner tube, multiple textile reinforcement plies, embedded steel wire helix for enhanced vacuum resistance, anti-static conductive elements, weather-resistant outer cover, and specially formulated bonding

compounds designed to ensure excellent structural integrity, flexibility, suction performance, and reliable service throughout the operational life of the hose.

RAW MATERIALS OF ROAD & RAIL TANKER OIL HOSE BY SANDHYAFLEX				
S. No.	Raw Material	Image	Typical Grade / Example	Function / Purpose
1	Inner Tube Compound (Oil Resistant Rubber)		<ul style="list-style-type: none"> NBR / NBR-PVC Blend ARPM / CR Oil Resistant Grade 	<ul style="list-style-type: none"> Provides oil & fuel resistance Ensures smooth flow of petroleum High vacuum & pressure resistance Long service life
2	Reinforcement Fabric (Textile Plies)		<ul style="list-style-type: none"> High Tensile Polyester Nylon Fabric Synthetic Textile Cord 	<ul style="list-style-type: none"> Provides tensile strength Enhances burst resistance Improves dimensional stability Prevents elongation
3	Steel Wire Helix		<ul style="list-style-type: none"> Galvanized Steel Wire Helix High Tensile Spring Steel Wire 	<ul style="list-style-type: none"> Provides vacuum (suction) resistance Prevents hose collapse Increases structural strength Improves pressure rating
4	Outer Cover Compound (Oil & Weather Resistant)		<ul style="list-style-type: none"> CR / NBR / SBR Blend Oil & Weather Resistant Abrasion Resistant Grade 	<ul style="list-style-type: none"> Provides weather & abrasion resistance Oil, fuel & chemical resistant Protects reinforcement layers Ensures long service life
5	Anti-Static Compound (If Applicable)		<ul style="list-style-type: none"> Conductive Rubber Compound Carbon Loaded Compound 	<ul style="list-style-type: none"> Prevents static electricity build-up Ensures safe fuel transfer Meets safety standards
6	Bonding Agents		<ul style="list-style-type: none"> Resorcinol Formaldehyde Latex (RFL) Rubber to Rubber Adhesive Metal Primer / Adhesion Promoters 	<ul style="list-style-type: none"> Ensures strong bonding Enhances adhesion between layers Prevents delamination Improves hose integrity
7	Processing Oils		<ul style="list-style-type: none"> Paraffinic Oil / Aromatic Oil Extender Oils 	<ul style="list-style-type: none"> Improves processability Enhances flexibility Reduces internal heat generation
8	Additives & Stabilizers		<ul style="list-style-type: none"> Anti-Oxidants (TMQ / RD) Heat Stabilizers Wax / Plasticizer 	<ul style="list-style-type: none"> Prevents aging & cracking Improves heat & ozone resistance Extends service life
9	Fillers		<ul style="list-style-type: none"> Carbon Black (N-330 / N-550) Calcium Carbonate Clay / Silica 	<ul style="list-style-type: none"> Improves abrasion resistance Enhances hardness & strength Reduces cost & improves stability
10	Colorants & Pigments (If Applicable)		<ul style="list-style-type: none"> Iron Oxide / Organic Pigments Carbon Black 	<ul style="list-style-type: none"> Provides color identification Enhances appearance UV resistant colours

MANUFACTURING PROCESS



RAW MATERIALS
MIXING



CALENDERING
(SHEET FORMING)



CUTTING
TO SIZE



INNER TUBE
EXTRUSION



FABRIC PLY &
WIRE HELIXING



OUTER COVER
EXTRUSION



VULCANIZATION /
CURING



QUALITY
INSPECTION



FINISHED ROAD &
RAIL TANKER OIL HOSE

HIGH QUALITY MATERIALS
EXCELLENT OIL RESISTANCE
SUPERIOR PRESSURE & VACUUM PERFORMANCE
SAFE & RELIABLE
COMPLIANT WITH STANDARDS
LONG SERVICE LIFE

The components shall possess excellent resistance to petroleum products, diesel fuel, gasoline, lubricating oils, kerosene, biodiesel, weathering, ozone exposure, UV radiation, abrasion, flexing, vacuum conditions, pressure fluctuations, and demanding operating environments commonly encountered in petroleum terminals, fuel depots, refineries, road tanker fleets, railway tank wagons, industrial fuel handling facilities, marine fuel transfer systems, and bulk liquid transportation applications.

Manufactured from carefully selected oil-resistant rubber compounds and reinforcement materials, **Sandhyaflex Road & Rail Tanker Oil Hoses** provide reliable fuel transfer, superior suction capability, excellent pressure performance, reduced maintenance requirements, enhanced operational safety, and extended service life across a wide range of petroleum handling and hydrocarbon transfer applications.

Physical and Mechanical Properties – Sandhyaflex Road & Rail Tanker Oil Hose:

S. No.	Property / Test	Requirement
1	Product Type	Road & Rail Tanker Oil Hose
2	Material Composition	Oil Resistant Natural/Synthetic Rubber with Textile and Steel Helix Reinforcement
3	Colour	Black / Blue / Red / Yellow / Green / Custom Colours
4	Hose Type	Petroleum Oil Suction & Discharge Hose
5	Shape	Cylindrical Flexible Hose
6	Surface Finish	Smooth
7	Construction	Multi-Layer Reinforced Rubber Hose
8	Inner Tube	Oil Resistant Natural/Synthetic Rubber
9	Reinforcement	High Tensile Textile Cord with Steel Wire Helix
10	Outer Cover	Weather & Oil-Resistant Rubber Compound
11	Abrasion Resistance	Excellent
12	Oil Resistance	Excellent
13	Tensile Strength	High
14	Elongation at Break	High
15	Pressure Resistance	Excellent
16	Vacuum Resistance	Excellent
17	Flexibility	Excellent
18	Kink Resistance	Good
19	Impact Resistance	Good
20	Fatigue Resistance	Excellent
21	Hydrocarbon Resistance	Excellent
22	Moisture Resistance	Excellent
23	Weather Resistance	Excellent
24	UV Resistance	Excellent
25	Ozone Resistance	Excellent
26	Corrosion Resistance	Excellent
27	Anti-Static Properties	Available / As Per Requirement
28	Temperature Resistance	Suitable for Petroleum Transfer Applications
29	Flow Efficiency	High Due to Smooth Bore Construction
30	Dimensional Stability	High
31	Working Pressure	As per Design and Application Requirement
32	Burst Pressure	As per Hose Design Specification
33	Internal Diameter Range	Project Specific
34	Length Availability	Standard and Custom Lengths Available
35	End Connections	Built-In, Flanged, Coupled or Custom Fittings
36	Service Life	Long-Term Durable Performance

37	Typical Applications	Petroleum Transfer, Tanker Loading & Unloading, Refineries and Fuel Depots
38	Country of Origin	Made in India
39	Maintenance Requirement	Low

Usage Tips:

- Select the appropriate hose diameter, working pressure, vacuum rating, reinforcement construction, and length based on the type of petroleum product, flow rate, loading/unloading capacity, transfer distance, and operating conditions.
- Ensure compatibility between the hose, pumps, tanker connections, loading arms, couplings, valves, and associated fuel handling equipment before installation.
- Verify that the hose pressure rating, vacuum capability, oil resistance, and reinforcement design meet project specifications, safety regulations, and operational requirements.
- Inspect hoses, flanges, couplings, clamps, connectors, grounding systems, and fittings before installation for damage, cuts, cracks, deformation, or manufacturing defects.
- Ensure proper alignment and secure connection of hose assemblies to minimize stress concentration and prevent leakage during loading and unloading operations.
- Use recommended couplings, clamps, grounding devices, connectors, and installation procedures specified by equipment manufacturers and terminal operators.
- Maintain the minimum recommended bending radius to prevent kinking, excessive stress, and premature hose failure.
- Avoid twisting, dragging over sharp surfaces, excessive impact, or improper handling during transportation, storage, and installation.
- Ensure all hose assemblies are adequately supported and protected from excessive vibration, mechanical damage, and external abrasion.
- Proper grounding and bonding procedures should be followed during fuel transfer operations to minimize static electricity hazards.
- Installation and commissioning should be carried out by qualified personnel using approved operating procedures and safety practices.
- Follow applicable petroleum industry standards, hazardous area regulations, transportation safety requirements, and project-specific operating guidelines throughout installation and operation.

Maintenance and Care:

Maintaining **Sandhyaflex Road & Rail Tanker Oil Hoses** ensures maximum operational efficiency, extended service life, and reliable petroleum transfer performance.

- **Regular Inspection** – Inspect the hose body, reinforcement areas, steel helix sections, couplings, fittings, and grounding systems for signs of wear, cuts, cracks, bulging, deformation, abrasion damage, or oil leakage.
- **Keep Clean** – Remove accumulated oil residues, dirt, dust, sludge, and foreign materials from hose surfaces and connection points after operation.
- **Inspect End Connections** – Periodically check flanges, clamps, connectors, couplings, grounding cables, and fittings for looseness, corrosion, wear, or leakage.
- **Monitor Hose Wear** – Regularly evaluate inner tube condition, cover wear, reinforcement exposure, and wall thickness reduction.
- **Avoid Excessive Bending** – Prevent hose operation below the recommended minimum bend radius to reduce stress concentration and extend service life.
- **Protect Against Mechanical Damage** – Avoid dragging hoses over rough surfaces, sharp edges, metal structures, railway tracks, or abrasive ground conditions.
- **Store Properly** – Store hoses in a cool, dry location away from direct sunlight, ozone-producing equipment, chemicals, excessive heat sources, and open flames when not in use.
- **Monitor Operating Pressure and Vacuum** – Ensure operating pressure and vacuum conditions remain within the hose's rated specifications and avoid sudden pressure surges wherever possible.
- **Inspect Reinforcement Integrity** – Check for signs of reinforcement separation, blistering, delamination, steel helix damage, or structural deterioration.
- **Check Conductivity Systems** – Periodically verify the integrity of anti-static and grounding systems where applicable.
- **Timely Replacement** – Replace worn or damaged hoses promptly to prevent operational downtime, fuel leakage, environmental hazards, and safety risks.

Applications by Countries:

India

- Widely used in petroleum depots, oil terminals, refineries, fuel transportation fleets, railway tank wagon loading stations, and industrial fuel handling facilities.
- Commonly specified for diesel, petrol, kerosene, and fuel oil loading and unloading operations.

- Strong demand driven by expanding fuel distribution networks, refinery capacity growth, and infrastructure development.

China

- Extensively used in petroleum terminals, refineries, fuel storage depots, railway loading stations, and industrial fuel transfer systems.
- Preferred for reliable tanker loading and unloading operations involving petroleum products.
- Strong demand from industrial expansion, transportation infrastructure, and energy sector development.

United States

- Commonly used in fuel terminals, refineries, transportation fleets, petrochemical facilities, and bulk fuel storage operations.
- High emphasis on safety, durability, environmental compliance, and operational reliability.
- Growing demand from fuel logistics modernization and energy infrastructure projects.

Europe

- Widely utilized in petroleum storage facilities, fuel distribution terminals, railway fuel handling systems, and industrial process plants.
- Strong focus on operational reliability, environmental protection, and safety compliance.
- Preferred for applications requiring long service life and dependable hydrocarbon resistance.

Middle East

- Applied in refineries, oil terminals, fuel depots, petrochemical complexes, and bulk liquid handling facilities.
- Designed to perform under high temperatures and demanding petroleum handling environments.
- Strong demand driven by oil & gas production, refining operations, and energy infrastructure investments.

Africa

- Used in fuel distribution systems, petroleum storage facilities, mining operations, transport fleets, and industrial fuel handling applications.
- Increasing adoption due to growth in energy infrastructure and transportation sectors.
- Preferred for durability, reliability, and low maintenance requirements.

Southeast Asia

- Widely used in petroleum terminals, fuel distribution networks, industrial facilities, marine fuel handling operations, and refinery projects.
- Strong demand driven by industrialization, transportation growth, and expanding fuel consumption.
- Suitable for tropical climates, high humidity, and continuous operating conditions.

Australia

- Commonly utilized in fuel terminals, mining operations, bulk fuel storage facilities, railway fuel handling systems, and industrial infrastructure projects.
- Preferred for reliable petroleum transfer performance under varying climatic conditions.
- Strong demand from mining, energy, transportation, and industrial development sectors.

Get in touch:

Address : 5-24-1223/5/1, Ambedkar Nagar, Gajularamaram, Quatubulapur, R. R. Dist, Hyderabad, Telangana - 500055, India

PhoneNo : [\(+91\) 9652998932](tel:+919652998932)
[\(+91\) 6304766851](tel:+916304766851)
[\(+91\) 8688537041](tel:+918688537041)
[\(+91\) 9392275616](tel:+919392275616)
[\(+91\)9550921831](tel:+919550921831)
[\(+91\) 8919488523](tel:+918919488523)
[\(+91\)8074580219](tel:+918074580219)

Email : info@sandhyaflex.com

Website: <https://www.sandhyaflex.com>