

Purpose

To review and reinforce **critical safety protocols** for **transferring liquid asphalt from marine vessels to terminal storage tanks**. This operation involves handling a **high-temperature, potentially flammable product** and requires strict adherence to environmental, fire, and operational safety standards.

Key Hazards During Ship-to-Tank Transfers

1. **High product temperature** (typically 250°F – 375°F / 120°C – 190°C)
2. **Fume and vapor exposure** – potentially flammable or toxic
3. **Product spills** or hose/pipeline leaks
4. **Static electricity buildup** during loading/unloading
5. **Fire/explosion risk**
6. **Personnel injury** from pressurized lines or hot surfaces
7. **Environmental contamination**
8. **Poor communication** between ship and shore teams

Safety Precautions and Procedures

1. Pre-Transfer Preparation

- Conduct a **Ship/Shore Safety Checklist** (ISGOTT or terminal-specific format)
- Hold a **pre-transfer safety meeting** with:
 - Vessel officer in charge
 - Terminal operator
 - Shore-based safety personnel
- Ensure all parties agree on:
 - **Transfer rate**
 - **Emergency stop signals**
 - **Communication protocols**
 - **Tank line-up and capacity confirmation**

2. Inspection of Transfer Equipment

- Inspect **loading arms, hoses, gaskets, and connections** for wear, leaks, or damage.
- Verify **tight connections** at both ship and shore manifolds.
- Confirm **grounding and bonding cables** are in place to prevent static discharge.
- Ensure **drip pans** and **spill containment** are positioned correctly.

3. PPE Requirements

Minimum PPE must include:

- Flame-resistant coveralls
- Chemical-resistant gloves
- Safety goggles or face shield
- Hard hat
- Steel-toed, slip-resistant boots
- High-visibility life vest (if working near water)



4. During the Transfer

- Maintain **continuous communication** between ship and terminal via radio or landline.
- Regularly monitor:
 - **Pressure gauges**
 - **Temperature readings**
 - **Flow rates**
 - **Tank levels** to avoid overfill
- Keep the **manifold area manned** at all times.
- Ensure **hot surfaces and product lines** are marked and avoided.
- Prohibit **smoking, hot work, or open flames** within the designated transfer area.

5. Emergency Preparedness

- Confirm **Emergency Shutdown (ESD)** systems are armed and tested.
- Firefighting equipment must be:
 - Fully charged
 - Unobstructed
 - Within easy reach (portable extinguishers, monitors, foam, etc.)
- All personnel must be briefed on **emergency alarms, evacuation routes, and first aid stations.**

Response to Abnormal Conditions

Situation	Action
Leak or drip detected	Stop transfer, isolate the source, notify supervisor
Tank overfill risk	Initiate ESD, inform ship and terminal teams
Fume exposure symptoms	Move to fresh air, report to first aid
Fire or ignition source	Sound general alarm, initiate fire response procedures
Communication loss	Stop transfer until communication is re-established

Additional Tips

- **Never leave a transfer unattended.**
- Do not make or break connections while the line is pressurized or flowing.
- Treat **all equipment as hot**—use caution and PPE accordingly.
- Maintain **good housekeeping**—keep work areas free of trip hazards and spills.

Final Reminder

Ship-to-tank transfers involve multiple risks that can escalate quickly. Everyone must remain alert, communicate clearly, and follow all safety procedures without exception. Your vigilance protects the crew, the terminal, the environment, and the facility.

