



The Moving Innovation

Construction Industry



Construction Industry

Construction industry has played significantly roles in Thailand for a decade. As a result of the market growing trend, building construction whether they be residential, industrial, or commercial building are growing accordingly. High quality concrete materials is one of the most building impact factors that the customers consider. Concrete slab, concrete pile, and precast concrete are the basic concrete products, and widely used. To produce a smooth concrete surface and permit easy removal of concrete finish, selecting the right and high quality mold oil is a must.

1. Concrete Mixing Process

Procedure	Recommended Lubricants
Mix cement with sand, gravel, and water to create concrete via a mixer.	<ul style="list-style-type: none">- PTT GEAR OIL EP - High performance industrial gear oil used for lubricating gearboxes at a mixer, and silo.- PTT LI-PLEX GREASE - Extreme heat resistant grease used for lubricating a butterfly valve at a silo.

2. Mold Preparing Process

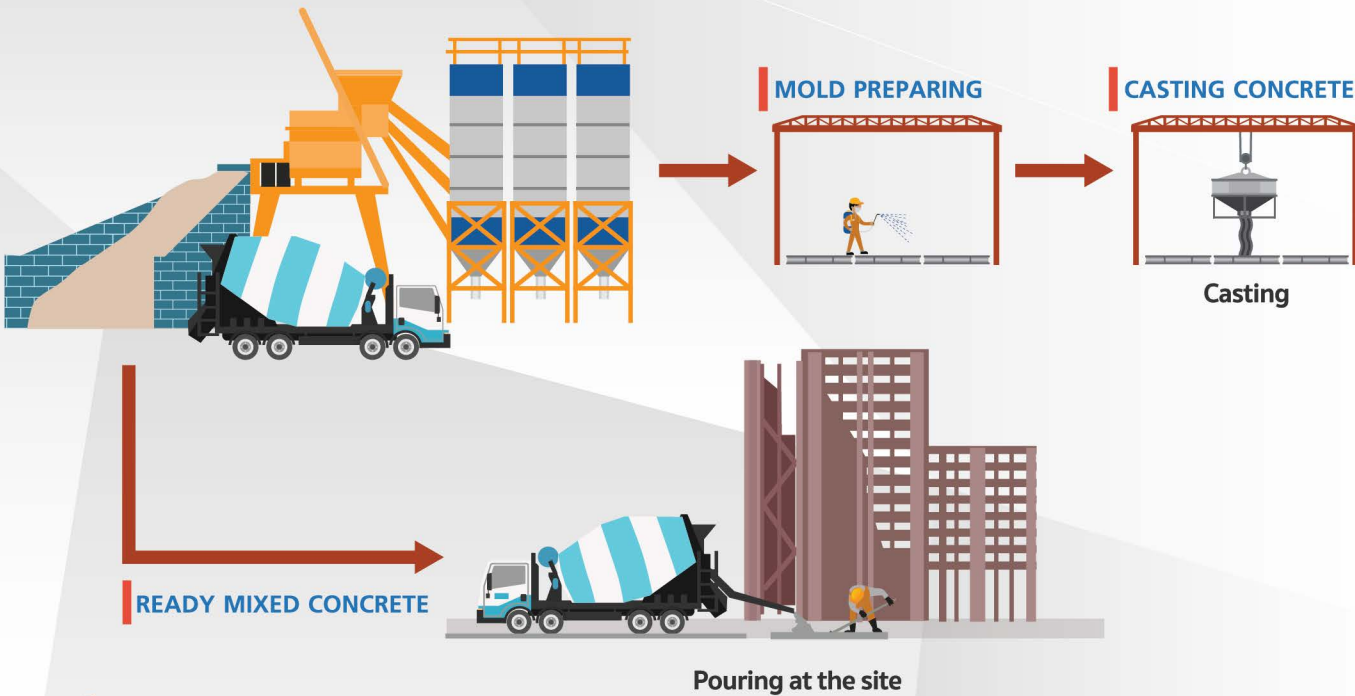
Procedure
<ul style="list-style-type: none">- Clean a mold or form- Apply mold oil covering mold or form surface to create an oil film.- Run a piece of rebar (reinforced steel) through the voids.

3. Concrete Casting Process

Recommended Lubricants	Procedure	Recommended Lubricants
<ul style="list-style-type: none">- PTT MOLD OIL C - Water-soluble/ Emulsifiable mold release oil used to prevent concrete sticking or build-up on molds and forms.- PTT MOLD OIL N 01 - Neat mold release oil used to prevent concrete sticking or build-up on molds and forms.	<ul style="list-style-type: none">- Fill casting or shuttering with concrete- Vibrate concrete to eliminate voids and allow air bubble to escape- Cure concrete to reach required strength value	<ul style="list-style-type: none">- PTT GEAR OIL EP - Industrial gear oil used for lubricating crane gearboxes

4. Delivery Process

Procedure	Recommended Lubricants
<ul style="list-style-type: none">- Concrete mixer trucks - Deliver ready mixed concrete- Trucks - Deliver precast concrete	<ul style="list-style-type: none">- DYNAMIC ULTRA PLUS - Premium performance heavy-duty diesel engine oil for concrete mixer trucks and trucks- DYNAMIC PLUS - High performance heavy-duty diesel engine oil for concrete mixer trucks and trucks- PTT GEAR OIL EP - High performance industrial gear oil used for lubricating concrete mixer gearboxes- PTT GL-5 - High quality automotive gear oil used for lubricating concrete mixer gearboxes



Mold Oil

A mold release agent produced from paraffinic base oil with high performance additives, used extensively prior to concrete casting process. Among its several benefits, mold oil provides a smooth surface finish, decreases air bubble on the surface, and permits easy removal of molds and forms. It is applicable in concrete slab, concrete pile, and precast concrete creating process.

PTT MOLD OIL C



Water-soluble/ Emulsifiable mold release oil used for concrete slab, concrete pile, and precast concrete floor and beam. PTT MOLD OIL C prevents concrete sticking or build-up on molds and forms, provides a smooth surface finish, and reduces the rate of air bubble forming.

PTT MOLD OIL N 01



Neat mold release oil used for wall precast concrete and other precast concrete. PTT MOLD OIL N 01 prevents concrete sticking or build-up on molds and forms, protects steel molds and forms from corrosion, provides a smooth surface finish, and reduces the rate of air bubble forming.

Applications
<ul style="list-style-type: none">- Mixed with water at a desired ratio- Spray, brush, or swab the emulsion on molds or forms <p>Note: For the best performance, the product are considered stable at full potency for 6-8 months from the manufactured date.</p> <ul style="list-style-type: none">- Spray, brush, or swab the emulsion on molds or forms (The product can be applied with automatic spraying machine e.g. EBAWE)



Related Product

PTT GEAR OIL EP



ISO VG 68, 100, 150, 220, 320, 460, 680
A high performance heavy duty industrial gear oil formulated from paraffinic base oil with a high quality extreme pressure and anti-oxidant agents offering outstanding lubrication performance under severe conditions providing a long-term usage.

PTT LI-PLEX GREASE



NLGI 2, 3
A high performance heat resistant grease with lithium-complex soap and extreme pressure agent providing heat and load resistance. PTT LI-PLEX GREASE is complied with National Lubricating Grease Institute (NLGI) standards.

PTT DYNAMIC ULTRA PLUS



SAE 15W-40, 20W-50
A premium performance heavy duty diesel engine oil with DDL Booster technology. Recommended for at most EURO IV diesel engines.

PTT DYNAMIC PLUS



SAE 15W-40, 20W-50
A high performance heavy duty diesel engine oil with DDL Booster technology, suitable for all diesel engines.

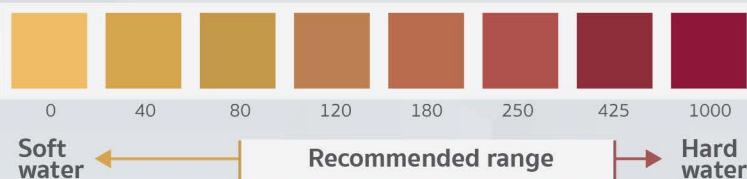
Applications
<ul style="list-style-type: none">- It is suitable for lubricating enclosed industrial reduction gear systems operating under either normal or severe conditions.- It could be applied for both heavy duty industrial machine and automotive vehicle, especially at high-loaded points e.g. Grinder bearing, metal cutting, and rolling machine bearing, and truck's wheel bearing. The operating temperature should not exceed 180 °C.- It is designed for at most EURO IV heavy duty diesel engines without DPF e.g. Common rail, and unit injector systems. Oil drain interval is 20,000-30,000 km.- It is designed for all diesel engines. Oil drain interval is 15,000-20,000 km.

Mixing procedure

Water Characteristics

- Cleanliness** : Use clean water. Rough and undesired concrete surface will be the consequences of using dirty water.
- Hardness** : Use an appropriate hardness water. Too high water hardness level (exceed 425 ppm) decreases the capability of water solubility in oil. While too low water hardness level (lower than 80 ppm) increases the rate of foam creation.

Water hardness value (mg/L or ppm)



Mixing Ratio

Structural Elements	Mold Depth (cm.)	Recommended Ratios (Oil : Water)
Concrete Slab	5 cm	1:6
Concrete Pile	≥ 30 cm	1:5
	< 30 cm	1:6

Note : Oil and Water ratio is adjustable depending on concrete removal difficulty and surface finish quality

Mixing methodology

- Determine** the right daily amount of water and oil
- Measure** the desired amount of water and oil
- Fill** prepared container with water following up with oil
- Stir** the mixture continuously until becoming white, milk-like liquid



Solutions **are not** homogeneous mixtures



Solutions **are** homogeneous mixtures

Note : In case water and oil are barely soluble, do the water hardness verification. If it exceeds 425 ppm, use alum to purify the water, or use another appropriate water supply.

Applying Features



Brushing



Swabbing



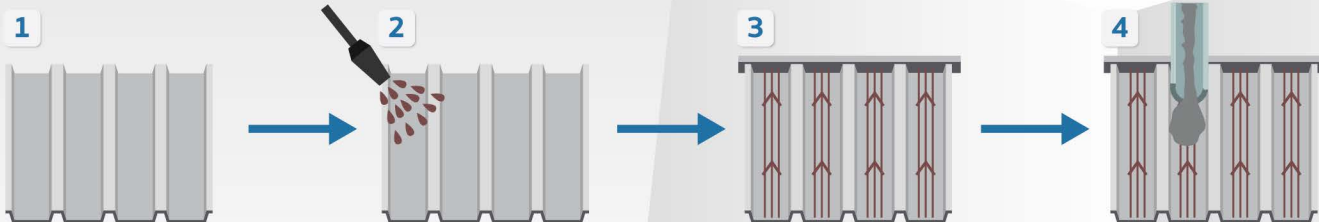
Spraying

Duration

After applying a mold oil and running a piece of rebar, fill the mold with concrete immediately or within 24 hours. In case of raining before filling, clean the mold first and do mold oil applying again.

Sequence of Concrete Preparation

In case concrete reinforcing bar is involved, strictly do the following procedure;



Mold Preparing

Clean a prepared mold, ensure it is dry and there is no dust, dirt, and concrete residues left on the mold

Oil Applying

Apply or spray a well-mixed mold oil and water on the mold thoroughly

Rebar Stretching

Run a piece of rebar through the voids, and ensure it remains untouched by the mold oil

Concrete Pouring

Fill the mold with concrete immediately or within 24 hours after applying the mold oil



✗ Example of **low** quality workpiece



✓ Example of **high** quality workpiece

FREE

"Molducator", a service by PTT Lube Solutions, for a valued customer who is interested in using our mold oil trial. Please send us your inquiry at our phone number and email address below

Training

Consistently deliver a great knowledge of using mold oil



Demonstration

Demonstrate a genuine use of mold oil



Follow up

Follow up mold oil test, finish removal, and surface finish quality



Advice

Offer genuinely helpful advice that leads to appropriate decisions

