

### 3 Recovering removal proposal of offshore contaminant

#### 3.1 Oil spill containing proposal

##### 3.1.1 Requirement to performance of oil boom under various environments

In JT/T465-2001 "Oil boom", water area around the oil boom is divided into flat water, flat white water, sheltered water and open water. The flat water means that of the wave height between 0 and 0.3m and the water velocity below 0.4m/s. The flat white water means that of the wave height between 0 and 0.3m and the water velocity be 0.4m/s or above. The sheltered water means that of the wave height between 0 ~ 1m. The open water means that of the wave height between 0 ~ 2m or above 2m. Requirement to the performance of the oil boom is different owing to different water environment; any type of oil boom is unlikely to suitable for different kinds of water environments.

Requirement to performance of the oil boom under different water environment is shown in table 3-1.

**Table 3-1 Requirement to performance of the oil boom under different water**

	Flat lake harbor of the wave height less than 0.3m	Stream surface with tide	Inshore sheltered water of the wave height less than 1.5m	Open water of the wave height greater than 1.0m
Freeboard	0.2 ~ 0.5 m	0.3 ~ 0.5 m	0.4 ~ 0.6 m	0.5 ~ 1.0 m
Draught	0.2 ~ 0.5 m	0.3 ~ 0.7 m	0.4 ~ 0.8 m	0.6 ~ 1.5 m
Buoyancy to weight ratio	3 : 1 ~ 10 : 1	3 : 1 ~ 10 : 1	5 : 1 ~ 12 : 1	8 : 1 ~ 15 : 1
Total tension strength	Not less than 10 kn	Not less than 30 kn	Not less than 50 kn	Not less than 150 kn

##### 3.1.2 General principle of selecting oil boom

Selection of the oil boom should firstly take the requirement to the performance and fundamental performance parameter of the oil boom into account, then site environment and operating performance into account.

(1) There are several conditions of the water environment as follows:

Undisturbed water level of the breaker height 0.3m (lake, harbor, etc.)

Undisturbed water level with current ( river)

Sheltered water of the wave higher than 1.0m

Open water of the wave higher than 1.0m

(2) Performance parameters of the oil boom include:

- Freeboard
- Draught
- Buoyant weight ratio
- Total tensile strength

(3) Operating performances of the oil boom include:

- Durability of oil boom
- Easy to deploy
- Possess good seakindliness
- Quick in deploying speed
- Good coastline tightness
- Easy to maintain
- Facilitate to store with good applicability

In addition to the above factors, the oil boom should also be selected according to purpose of the deployment- for containing, diversion, or for protection. Table 3-2 is the selection guide of oil boom in "emergency plan of oil spill in northern sea zone".

**Table 3-2 Selection guide to oil boom**

Symbol description: 1. good; 2. moderate; 3, poor		Type of oil boom				
		Solid floatation	Inflation	Retractable self inflation	Exterior tension member	Fence type
Environmental condition	Inshore Hs>3ft V<1kn	2	1	2	1	2
	Harbor Hs>3ft V<1kn	1	1	1	2	2
	Flat water Hs>3ft V<0.5kn	1	1	1	2	1
	High flow rate V>1kn	2	2	3	1	3
	Depth of shallow water <1n	1	2	2	3	3
Performance characteristic	Used under conditions with coarse objects	1	2	3	3	22
	Margin buoyancy	2	1	1	2	3
	Seakindliness	2	1	1	2	3
	Strength	2	1	3	1	1
Operating characteristic	Easy in towing	2	2	1	3	2
	Easy in rinse	1	1	1	3	1