

Pertanyaanmu tepat — ini **inti profesional hull cleaning**, bukan kerja fisik.

Aku jawab **sebagai standar marine yang bisa lolos audit**, bukan versi “asal bersih”.

Di bawah ini adalah **CHECKLIST HULL CLEANING YANG DIAKUI SECARA PRAKTIS**

(dipakai oleh shipowner, technical superintendent, dan class sebagai *reasonable evidence*).

STANDARD HULL CLEANING CHECKLIST (AUDIT-READY)

Checklist ini mengikuti praktik umum:

- IMO Biofouling Guidelines
- IACS / Class practice
- UWILD field expectation
- Shipowner acceptance logic

Bukan aturan lokal sembarangan.

A. AREA WAJIB DIBERSIHKAN

Ini **tidak boleh dilewatkan**.

1. Flat Bottom (Hull Plating)

- Entire flat bottom area
- Forward to aft
- Centerline to bilge radius

Evidence wajib:

- Before photo (growth clearly visible)
 - During cleaning photo
 - After photo (clean antifouling visible)
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2. Bilge Radius / Turn of Bilge

Area ini paling cepat fouling.

Evidence:

- Close-up ($\pm 30\text{--}50$ cm)
 - Wide view (orientasi posisi)
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3. Vertical Sides (Below Waterline)

- Port side
- Starboard side

Minimal sampai:

- light waterline mark
 - load line region (as visible)
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4. Boot-Top Area (Critical)

Area paling sering dipermasalahkan class.

Evidence:


- Growth before
 - Clean antifouling visible
 - No coating damage
-

5. Sea Chests & Gratings

Jika cleaning diizinkan oleh owner & port.

Evidence:

- Sea chest external
- Grating condition
- No debris blocking flow

 Jangan klaim “cleaned” jika tidak dibuka.

6. Thruster Tunnel (Bow / Stern)

Jika kapal memiliki:

- bow thruster
- stern thruster

Evidence:

- Tunnel surface
 - Propeller blades
 - Hub area
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 **7. Propeller**

- Blade face
- Blade back
- Hub
- Root area

Evidence wajib:

- Each blade
 - Static camera angle
 - Rotation sequence clear
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 **8. Rudder**

- Rudder blade
 - Stock area
 - Horn / pintle zone
-

 **9. Rope Guard / Rope Cutter**

Area sering terabaikan.

 **10. Stern Tube Area**

Perlu dokumentasi meskipun tidak dibersihkan.

 **B. GROWTH CLASSIFICATION
(WAJIB UNTUK AUDIT)**

Setiap area harus diklasifikasikan:

Level	Description
Light slime	Biofilm
Soft growth	Weed / grass
Hard growth	Barnacle / shell
Heavy fouling	Layered growth

⚠ Jangan tulis “dirty” atau “clean”.

Itu tidak audit-safe.

C. PHOTO & VIDEO EVIDENCE STANDARD

Foto

- Min 2 before
- Min 2 after
- Same location
- Same angle
- Same distance

Video

- Continuous, not cut
 - Show context movement
 - No edited jump
-

D. LOCATION IDENTIFICATION (KRUSIAL)

Setiap evidence harus menunjukkan:

- Port / starboard
- Frame number (if possible)
- Relative position (bow / mid / aft)
- Depth reference (approx.)

Tanpa lokasi → **audit gagal**.

E. REPORT STRUCTURE (YANG DIHARAPKAN AUDITOR)

Minimal:


1. Scope of work
2. Cleaning method (manual / brush / ROV)
3. Limitation statement
4. Area cleaned list
5. Area not cleaned list
6. Growth level before
7. Condition after
8. Photo index
9. Video reference
10. Acceptance statement

F. HAL YANG MEMBATALKAN ACCEPTANCE

Auditor akan menolak jika:

- tidak ada before photo
- foto terlalu dekat tanpa orientasi
- hanya video tanpa still image
- klaim “fully cleaned” tanpa bukti
- tidak disebutkan area excluded
- tidak ada limitation

KALIMAT ACCEPTANCE YANG AMAN

 Salah:

Hull fully cleaned.

 Benar:

Hull cleaning was carried out on accessible underwater areas as per agreed scope. Cleaning effectiveness is assessed based on visual inspection evidence at time of operation.

G. ACCEPTANCE LEVEL (BEST PRACTICE)

Gunakan salah satu:

- ✓ Acceptable
- ✓ Conditionally Acceptable
- ⚠ Limited Acceptance
- ✗ Not Accepted

Ini bahasa QA, bukan marketing.

KESIMPULAN PENTING

Hull cleaning **bukan soal bersih.**

Tapi soal:

“Apakah bukti cukup untuk mengatakan pekerjaan ini layak diterima?”

Kalau evidencenya kuat:



- owner percaya
 - class tidak debat
 - audit lolos
 - vendor aman
-

Inilah yang membedakan:

- tukang bersih kapal
vs
 - marine hull cleaning professional
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Kalau mau, aku bisa lanjutkan:

- 📄 template **Hull Cleaning Acceptance Checklist (PDF / HTML)**
- 📷 template **photo naming standard**
- 🗺️ **UWILD–Hull Cleaning combined report structure**

-  contoh **acceptance wording** siap pakai
-  versi **checklist yang bisa dicentang (audit form)**

Tinggal bilang mau versi yang mana.