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FM COMNAVSEASYS COM WASHINGTON DC(UC)

SUBJ/NAVSEA APPROVED DECK COVERINGS

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REF A IS THE PREVIOUS NAVSEA APPROVED DECK COVERINGS MESSAGE.

REF B IS THE CURRENT NAVAL SHIPS TECHNICAL MANUAL CHAPTER 634, DECK COVERINGS.

REF C IS CHAPTER 7 OF THE LATEST NUCLEAR SUBMARINE ATMOSPHERE CONTROL MANUAL.

REF D IS THE OPNAV INSTRUCTION FOR WEIGHT AND STABILITY LIMITS FOR NAVAL SURFACE SHIPS.

REF E IS THE NAVSEA INSTRUCTION FOR WEIGHT AND MOMENT COMPENSATION AND LIMITING DRAFTS FOR NAVAL SURFACE SHIPS.

REF F IS THE NAVAL SHIPS TECHNICAL MANUAL CHAPTER 096 FOR WEIGHTS AND STABILITY.

REF G IS THE NAVSEA NAVAL MESSAGE IDENTIFYING THE STABILITY STATUS OF IN-SERVICE SHIPS.

REF H IS THE NAVSEA NAVAL MESSAGE AUTHORIZING AND GOVERNING THE USE OF PEEL-AND-STICK NONSKID PRODUCTS.

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1. THIS MESSAGE SUPERCEDES REFERENCES A AND B.
2. TABLE I IN PARAGRAPH 6 BELOW LISTS THE ONLY TYPES OF DECK COVERING SYSTEMS CURRENTLY APPROVED FOR USE IN THE SPACES LISTED. THE FIRST SYSTEM LISTED PROVIDES THE BEST BALANCE BETWEEN HIGHEST SERVICE LIFE AND LOWEST MAINTENANCE. SELECTION OF ONE OF THE ALTERNATE SYSTEMS MAY RESULT IN REDUCED SERVICE LIFE OR REQUIRE ADDITIONAL STEPS TO MAINTAIN. THE GUIDANCE IN THIS MESSAGE SUPERSEDES TABLE 634-2-1 OF REF B. INSTALLATION OF ANY UNAPPROVED DECK MATERIAL, OR INSTALLING ANY MATERIAL NOT LISTED AS AN APPROVED OPTION FOR A GIVEN SPACE, WILL REQUIRE NAVSEA APPROVAL VIA A MAJOR DEPARTURE FROM SPECIFICATION. NOTE THAT THIS MESSAGE DOES NOT REQUIRE ANY EXISTING INTACT DECK SYSTEM TO BE REPLACED IMMEDIATELY. HOWEVER, ONCE AN EXISTING DECK COVERING SYSTEM REQUIRES REPLACEMENT, THE REPLACEMENT SYSTEM SHALL BE SELECTED ONLY FROM ONE OF THE APPROVED OPTIONS IN TABLE I.
3. ALL DECK COVERING SYSTEMS (INCLUDING ASSOCIATED ADHESIVES, PRIMERS, AND UNDERLAY MATERIALS) SHALL BE VERIFIED TO HAVE BEEN TESTED FOR OFF-GASSING IN ACCORDANCE WITH REF C, AND CERTIFIED AND ASSIGNED A USAGE CATEGORY OF EITHER "LIMITED" OR "PERMITTED," PRIOR TO ANY MATERIAL BEING STORED OR INSTALLED ONBOARD A SUBMARINE.
4. WEIGHT CONTROL CONSIDERATIONS: REFERENCES D AND E ESTABLISH POLICY

REGARDING WEIGHT AND STABILITY LIMITS AS WELL AS FOR CONTROL OF WEIGHT AND MOMENT OF COMMISSIONED SURFACE SHIPS. REFERENCE G IDENTIFIES THE CURRENT STABILITY STATUS OF SURFACE SHIPS. CONTROLLING WEIGHT AND MOMENT OF SHIPS IN STATUS 2, AS DEFINED IN REFERENCE E, IS CRITICAL. REFERENCES E AND F IDENTIFY THE NEED FOR FLEET COMMANDER AND SHIP'S COMMANDING OFFICER ACTION TO CONTROL UNPLANNED WEIGHT GROWTH FROM SOURCES INCLUDING, AMONG OTHERS, EXCESS ACCUMULATION OF DECK TILE. AS SUCH, WHEN REPLACING A DECK COVERING WITH A DIFFERENT COVERING SYSTEM APPROVED BY THIS MESSAGE, THE TYPE COMMANDER (OR SHIP'S COMMANDING OFFICER IF DECK COVERINGS ARE BEING INSTALLED BY SHIP'S FORCES) SHALL EVALUATE THE NET WEIGHT IMPACT AND TAKE APPROPRIATE ACTION TO COMPENSATE FOR AND CONTROL ANY INCREASES. SPECIFIC APPROVAL SHALL BE OBTAINED FROM THE APPLICABLE PROGRAM OFFICE VIA THE NAVSEA FLEET ADVOCATE'S OFFICE (SEA 05N) USING A DEPARTURE FROM SPECIFICATION (DFS) ONLY IF THE AVERAGE OF THE WEIGHT CHANGES DUE TO ALL PLANNED DECK COVERING MODIFICATIONS SHIPWIDE IS 0.3 POUNDS PER SQUARE FOOT OR GREATER.

NOTE: IF THE PLANNED DECK COVERING SYSTEM CHANGE IS PART OF AN APPROVED SHIP MODIFICATION (I.E. SHIP CHANGE DOCUMENT OR LEGACY SHIP ALTERATION), NAVSEA APPROVAL IS IMPLICIT AND NO SEPARATE DFS IS REQUIRED.

FOR COMPARISON PURPOSES ONLY, AVERAGE WEIGHTS FOR EACH DECK COVERING TYPE ARE LISTED BELOW.

NOTE THAT THESE VALUES ARE THE MINIMUM AMOUNT THESE SYSTEMS CAN WEIGH WHEN APPLIED AT THE LOWEST ALLOWABLE THICKNESS BY THE MANUFACTURER. ACTUAL INSTALLATION WEIGHT WILL BE SIGNIFICANTLY HIGHER AS INSTALLERS TYPICALLY APPLY TROWELLED PRODUCTS AT MUCH GREATER THICKNESSES.

A. WET SPACE DECK COVERING SYSTEMS (WITH WATERPROOF MEMBRANE AND AN AVERAGE TOTAL LIGHTWEIGHT UNDERLAYMENT THICKNESS OF 0.5" TO PROVIDE PROPER SLOPE TO DRAIN):

PORCELAIN TILES:	4.5 LBS PER SF
COSMETIC POLYMERIC:	
EPOXY WITH COLOR FLAKES:	2.9 LBS PER SF
EPOXY WITH BROADCAST QUARTZ:	3.0 LBS PER SF
EPOXY WITH MARBLE CHIPS:	3.1 LBS PER SF
SINGLE STEP (TYPE III):	6.5 LBS PER SF

(NOTE: WHEN APPLIED IN SINGLE STEP WITHOUT SEPARATE UNDERLAYMENT. IF LIGHTWEIGHT UNDERLAYMENT USED, WEIGHT CAN BE REDUCED TO 4.5 LBS PER SF)

B. DRY SPACE DECK COVERING SYSTEMS (AT MANUFACTURERS' MINIMUM RECOMMENDED THICKNESS AND WITH MINIMAL USE OF UNDERLAYMENT)

CARPET:	0.4 LBS PER SF
WEAR RESISTANT DECK TILES:	0.6 LBS PER SF
ELECTRICAL GRADE SHEET:	0.7 LBS PER SF
FATIGUE REDUCING DECK TILES:	1.1 LBS PER SF
COSMETIC POLYMERIC:	
EPOXY WITH COLOR FLAKES:	1.1 LBS PER SF
URETHANE WITH COLOR FLAKES:	1.1 LBS PER SF
EPOXY WITH BROADCAST QUARTZ:	1.2 LBS PER SF
EPOXY WITH MARBLE CHIPS:	1.2 LBS PER SF
SINGLE STEP (TYPE III):	1.2 LBS PER SF
VINYL COMPOSITION TILE:	1.6 LBS PER SF
2 LAYERS (SEE PARAGRAPH 5):	3.1 LBS PER SF
PORCELAIN TILE:	2.7 LBS PER SF
MASTIC:	4.2 LBS PER SF
QUARRY TILE:	5.7 LBS PER SF

5. ADDITIONALLY, TO PREVENT UNPLANNED WEIGHT GROWTH, AND TO ENSURE INTEGRITY OF THE FINAL DECK SYSTEM, WHEN CONDUCTING EXTENSIVE REPAIR OR REPLACEMENT OF AN EXISTING DECK COVERING SYSTEM, NO NEW DECK SYSTEM OTHER THAN VINYL COMPOSITION TILES MAY BE INSTALLED ON TOP OF THE EXISTING SYSTEM. EXISTING DECK MATERIALS MUST BE COMPLETELY REMOVED DOWN TO THE SUBSTRATE AND THE METAL SURFACE PREPARED TO THE DEGREE SPECIFIED IN 009-26 (SSPC-SP-11 AT A MINIMUM IF 009-26 IS NOT INVOKED) PRIOR TO INSTALLING THE NEW DECK SYSTEM. FOR VINYL COMPOSITION TILES ONLY, THE FIRST LAYER OF TILES INSTALLED MAY BE OVERLAID ONLY ONCE WITH NEW TILES. NO MORE THAN TWO (2) TOTAL LAYERS OF TILES MAY BE PRESENT AT ANY TIME. IF TWO LAYERS EXIST, THE ENTIRE EXISTING DECK SYSTEM MUST BE REMOVED TO BARE METAL AND THE SUBSTRATE PROPERLY PREPARED TO SSPC-SP-11 BEFORE NEW TILES MAY BE INSTALLED.

NOTE: THIS RESTRICTION IS NOT INTENDED TO PREVENT PERIODIC SANDING AND RESEALING OF THE EXISTING DECK SYSTEM'S FINISH COAT TO RESTORE THE COSMETIC APPEARANCE OF THE DECK COVERING.

6. APPROVED DECK COVERINGS BY SPACE

NOTE: THIS LIST IS PROVIDED USING GENERIC TERMS FOR CLASSES OF PRODUCTS (E.G. "EPOXY WITH COLOR FLAKES" VICE "COSMETIC POLYMERIC TYPE I CLASS 2") FOR EASE OF USE. ALL PRODUCTS IN A GIVEN CLASS OF MATERIALS MUST MEET THE REQUIREMENTS GIVEN IN TABLE II IN PARAGRAH 7 BELOW FOR THAT CLASS.

TABLE I: APPROVED DECK COVERING MATERIALS:

A. DECK COVERINGS FOR DRY INTERIOR SPACES

- 1) LIVING AND WORKING SPACES, INCLUDING OFFICES, BERTHING, MEDICAL SPACES, MANNED STOREROOMS, AND PASSAGEWAYS SERVING THOSE SPACES:
 - A) WEAR RESISTANT DECK TILES
 - B) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH COLOR FLAKES
 - 3) EPOXY WITH MARBLE CHIPS
 - 4) URETHANE WITH COLOR FLAKES
 - C) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
 - D) VINYL COMPOSITION TILE
- 2) PILOT HOUSE AND CONTROL STATIONS, CHART ROOM, COMBAT INFORMATION CENTER, BARBER SHOP, AND SHIPS STORE
 - A) FATIGUE REDUCING DECK TILES
 - B) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH COLOR FLAKES
 - 3) EPOXY WITH MARBLE CHIPS
 - 4) URETHANE WITH COLOR FLAKES
 - C) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
 - D) WEAR RESISTANT DECK TILES
 - E) VINYL COMPOSITION TILE
- 3) FLAG QUARTERS, CO AND XO QUARTERS, OTHER QUARTERS OF EQUIVALENT RANK (SUCH AS TROOP CO QUARTERS), WARDROOM AND CPO LOUNGES, LIBRARY, AND CHAPEL:
 - A) CARPET
 - B) WEAR RESISTANT DECK TILES
- 4) MESSING AREAS
 - A) PORCELAIN TILES

- B) WEAR RESISTANT DECK TILES
- C) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH COLOR FLAKES
 - 3) EPOXY WITH MARBLE CHIPS
 - 4) URETHANE WITH COLOR FLAKES
- D) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
- E) VINYL COMPOSITION TILE
- 5) DESIGNATED ELECTRICAL AREAS (E.G. CALIBRATION LABS, ELECTRONIC WORKSHOPS, CIC ON SUBMARINES, ETC.)
NOTE: ELECTRICAL GRADE MATS MUST BE USED NEXT TO ENERGIZED EQUIPMENT WHEN DECK COVERINGS LISTED IN B), C) OR D) BELOW ARE SELECTED.
 - A) ELECTRICAL GRADE SHEET
 - B) WEAR RESISTANT DECK TILES
NOTE: SHOULD NOT BE USED IN SPACES WHERE TILES ARE LIKELY TO BE EXPOSED TO PETROLEUM PRODUCTS
 - C) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT (WITH ELECTRICAL GRADE MATS IN ELECTRICAL OR ELECTRONIC WORKSHOPS)
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH COLOR FLAKES
 - 3) EPOXY WITH MARBLE CHIPS
 - 4) URETHANE WITH COLOR FLAKES
 - D) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
- 6) CARPENTER AND MACHINE SHOPS, AND OTHER SHOP SPACES:
 - A) HIGH DURABILITY PAINT WITH NONSKID IN FRONT OF MACHINERY
- 7) SIDE PASSAGEWAYS ONLY SERVING SHOP SPACES (NOT MAIN PASSAGES):
 - A) HIGH DURABILITY DECK PAINT
- 8) MACHINERY SPACES:
 - A) HIGH DURABILITY PAINT (WITH NONSKID IN WORKING AREAS AROUND MACHINERY AND ELECTRICAL GRADE MATS AROUND ELECTRICAL SWITCHBOARDS).
- 9) DRY GOODS STORE ROOMS WITH STORAGE RACKS INSTALLED:
 - A) HIGH DURABILITY DECK PAINT
- B. DECK COVERINGS FOR WET INTERIOR SPACES
 - 1) HEADS:
 - FOR ALL SURFACE SHIPS:
 - A) 3" X 3" PORCELAIN TILE SYSTEM (WITH WATERPROOF MEMBRANE AND EPOXY MASTIC AND GROUT ONLY)
 - FOR SUBMARINES ONLY:
 - A) 3" X 3" PORCELAIN TILE SYSTEM (WITH WATERPROOF MEMBRANE AND EPOXY MASTIC AND GROUT ONLY)
 - B) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT (WITH WATERPROOF MEMBRANE AND INTEGRAL COVE BASE)
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH MARBLE CHIPS
 - 2) SMALL ENCLOSED SPACES ATTACHED TO SANITARY SPACES (E.G. CLOSETS CONTAINING HOT WATER HEATERS)

- A) PORCELAIN TILE
- B) HIGH DURABILITY DECK PAINT
- 3) FOOD SERVICE SPACES (GALLEY, SCULLERY, BUTCHER SHOP, BAKERY, MEAT PREP ROOMS, FOOD SERVING LINES):
 - A) 6" X 6" OR 8" X 8" QUARRY TILES
 - B) 6" X 6" OR 8" X 8" PORCELAIN TILES
 - C) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT
 - 1) EPOXY WITH BROADCAST QUARTZ
 - 2) EPOXY WITH COLOR FLAKES
 - 3) EPOXY WITH MARBLE CHIPS
 - 4) URETHANE WITH COLOR FLAKES
 - D) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
- 4) TRASH COMPACTOR ROOMS, ETC.:
 - A) 6" X 6" OR 8" X 8" PORCELAIN TILES
 - B) MASTIC (CONCRETE) DECK SYSTEM
- 5) OTHER WET WORKING SPACES (E.G. NIXIE ROOM ON DDG 51 CLASS SHIPS):
 - A) HIGH DURABILITY DECK PAINT WITH NONSKID IN WALKING AREAS
- 6) LAUNDRY FACILITIES
 - A) 6" X 6" OR 8" X 8" PORCELAIN TILE SYSTEM (WITH WATERPROOF MEMBRANE AND EPOXY MASTIC AND GROUT ONLY)
 - B) COSMETIC POLYMERIC REQUIRING INITIAL SEAL COAT
 - 1) EPOXY WITH MARBLE CHIPS
 - 2) EPOXY WITH BROADCAST QUARTZ
 - 3) EPOXY WITH COLOR FLAKES
 - 4) URETHANE WITH COLOR FLAKES
 - C) SINGLE STEP COSMETIC POLYMERIC (TYPE III)
- C. UNMANNED SPACES
 - 1) WET, OR DRY:
 - A) HIGH DURABILITY DECK PAINT

7. MATERIALS REQUIREMENTS FOR DECK COVERING CLASSES:

SPECIFIC MATERIALS OF THE TYPES IDENTIFIED ABOVE MUST BE SELECTED FROM THE CURRENT QUALIFIED PRODUCTS LIST (QPL) FOR EACH PRODUCT TYPE (IF APPLICABLE), OR FROM PRODUCTS CERTIFIED AS MEETING THE CURRENT COMMERCIAL OR MILITARY STANDARDS REFERENCED BELOW.

IMPORTANT REMINDER:

AS DISCUSSED IN PARAGRAPH 3 ABOVE, INSTALLATION OF ANY MATERIALS ONBOARD SUBMARINES REQUIRES ADDITIONAL TESTING FOR TOXIC OFFGASSING AND OTHER SUBMARINE SPECIFIC REQUIREMENTS. PRIOR TO SELECTING ANY DECK COVERING MATERIALS FOR INSTALLATION ONBOARD SUBMARINES, THE COATING SHALL BE VERIFIED AS HAVING BEEN TESTED FOR OFF-GASSING IN ACCORDANCE WITH REF C, AND CERTIFIED AND ASSIGNED A USAGE CATEGORY OF EITHER "LIMITED" OR "PERMITTED." LISTING ON THE SUBMARINE MATERIAL CONTROL LIST (SMCL) CAN BE USED AS VERIFICATION OF SUCCESSFUL COMPLETION OF THIS TESTING. FOR PRODUCTS COVERED BY MIL-PRF-32170 (WEAR RESISTANT AND FATIGUE REDUCING DECK TILES) AND MIL-PRF-32171, (HIGH DURABILITY DECK PAINTS), ONLY TYPE II PRODUCTS MEET THIS REQUIREMENT AND MAY BE USED ON SUBMARINES. THE SMCL CAN BE ACCESSED AT [HTTPS:\(SLASH\)SLASH\)SMCL.DT.NAVY.MIL\(SLASH\)INDEX.CFM](https://(SLASH)SLASH)SMCL.DT.NAVY.MIL(SLASH)INDEX.CFM) A PASSWORD REQUEST FORM FOR ACCESS TO SMCL MAY BE OBTAINED FROM THIS WEBSITE.

TABLE II: SPECIFIC MATERIAL REQUIREMENTS:

- A. VINYL COMPOSITION TILE (VCT) OR VINYL TILE: NO QPL OR MIL-SPEC CURRENTLY EXISTS FOR THESE MATERIALS. ALL PRODUCTS MUST MEET THE REQUIREMENTS OF EITHER COMMERCIAL STANDARD ASTM F1066 (FOR VCT) OR ASTM F1700 (VINYL TILE), AND THE FIRE PERFORMANCE REQUIREMENTS OF MIL-STD-1623. A COPY OF ASTM F1066 OR F1700 CAN BE OBTAINED FROM:
ASTM INTERNATIONAL,
100 BARR HARBOR
PO BOX C700,
WEST CONSHOHOCKEN, PA 19428-
PHONE: 610-832-9585, FAX: 610-832-9555,
URL: WWW.ASTM.ORG.
- B. HIGH DURABILITY PAINT: ALL PRODUCTS MUST BE VERIFIED AS BEING LISTED ON QPL-32171 (FOR MIL-PRF-32171, DECK COATINGS, HIGH DURABILITY). PRODUCTS INTENDED FOR USE ONBOARD SUBMARINES MUST MEET MIL-PRF-32171, TYPE II. EXTERIOR WEATHER DECK PAINTS (EXCLUDING NONSKID) MUST MEET MIL-PRF-32171, TYPE III. FOR AFFF STATION DECKS, PRODUCTS MUST MEET THE REQUIREMENTS OF MIL-PRF-32171, TYPE IV.
- C. COSMETIC POLYMERIC COVERINGS:
- 1) PRODUCTS REQUIRING INTITIAL SEAL COAT
 - A) EPOXY WITH BROADCAST QUARTZ MUST BE LISTED ON QPL-24613 AS AN APPROVED TYPE I, CLASS 1 PRODUCT.
 - B) EPOXY WITH COLOR FLAKES MUST BE LISTED ON QPL-24613 AS AN APPROVED TYPE I, CLASS 2 PRODUCT.
 - C) EPOXY WITH MARBLE CHIPS MUST BE LISTED ON QPL-24613 AS AN APPROVED TYPE I, CLASS 3 PRODUCT.
 - D) URETHANE WITH COLOR FLAKES MUST BE LISTED ON QPL-24613 AS AN APPROVED TYPE II, CLASS 2 PRODUCT.
 - 2) SINGLE STEP (NO SEPARATE UNDERLAY OR SEALERS REQUIRED)
COSMETIC POLYMERIC PRODUCTS MUST BE LISTED ON QPL-24613 AS AN APPROVED TYPE III PRODUCT.
- D. PORCELAIN AND QUARRY TILES:
WHERE PORCELAIN TILES ARE SPECIFIED, ALL HORIZONTAL SURFACE TILES MUST BE PORCELAIN, AS DEFINED BY COMMERCIAL STANDARD A137.1. CERAMIC TILES WITH AN INTEGRAL BULL NOSE OR COVE BASE MAY BE USED ON THE VERTICAL COVING.
NO QPL OR MIL-SPEC CURRENTLY EXISTS FOR PORCELAIN OR QUARRY TILES. ALL PRODUCTS MUST MEET THE REQUIREMENTS OF COMMERCIAL STANDARD A137.1.
A COPY OF THIS STANDARD CAN BE OBTAINED FROM:
TILE COUNCIL OF AMERICA, INC., 100
CLEMSON RESEARCH BLVD., ANDERSON, SC 29625. PHONE:
864-646-8453, FAX: 864-646-2821. URL: WWW.TILEUSA.COM.
- E. CARPET: NO QPL OR MIL-SPEC CURRENTLY EXISTS FOR CARPETS. ANY SELECTED CARPETS SHALL BE WOOL, VELVET WEAVE, WOVEN THROUGH THE BACK, CONFORMING TO THE FIRE REQUIREMENTS OF MIL-STD-1623. ADDITIONALLY, THE CARPET SHALL BE EITHER SINGLE CUT PILE (17 N PER M2 (52 OZ. PER YD2) PILE), SINGLE LEVEL LOOP PILE (13.9 N PER M2 (42 OZ. PER YD2) PILE), MULTILEVEL LOOP PILE -

- WOVEN THROUGH BACK (14.6 N PER M2 (44 OZ. PER YD2) PILE).
- F. ELECTRICAL GRADE SHEET AND MATS: NO QPL CURRENTLY EXISTS FOR THIS DECK TYPE. PRODUCTS SELECTED MUST MEET THE PERFORMANCE REQUIREMENTS OF MIL-DTL-15562. ELECTRICAL GRADE SHEET IS REQUIRED IN ALL DESIGNATED ELECTRICAL AREAS (E.G. CCTV CONTROL ROOM, ELECTRIC POWER CONVERSION ROOMS, ELECTRICAL OR ELECTRONIC SHOPS, CONTROL AND EQUIPMENT ROOMS, IC AND GYRO ROOMS, RADAR ROOMS AND CONTROL ROOMS). ELECTRICAL GRADE MATS SHALL BE USED IN ALL NON-DESIGNATED ELECTRICAL AREAS WHERE SPECIFIC ELECTRICAL HAZARDS MAY EXIST.
 - H. MASTIC: MASTIC DECK MATERIALS MUST BE SELECTED FROM THOSE LISTED IN QPL-3134.
 - I. NONSKID: NONSKID PAINT PRODUCTS MUST BE SELECTED FROM THOSE LISTED IN QPL-24667. ADDITIONALLY, PEEL-AND-STICK NONSKID PRODUCTS HAVE RECENTLY BEEN APPROVED FOR SHIPBOARD USE IN PASSAGeways, SHOPS AND OTHER INTERIOR SPACES. REF D IS A LISTING OF APPROVED PRODUCTS.
 - J. FATIGUE REDUCING DECK TILES: ALL DECK TILES MUST BE SELECTED FROM THOSE LISTED IN QPL-32170 AS AN APPROVED TYPE I, CLASS 2, OR TYPE II, CLASS 2 PRODUCT. ONLY TYPE II PRODUCTS SHALL BE USED ONBOARD SUBMARINES.
 - K. WEAR RESISTANT DECK TILES: ALL DECK TILES MUST BE SELECTED FROM THOSE LISTED ON QPL-32170 AS AN APPROVED TYPE I, CLASS 1, OR TYPE II, CLASS 1 PRODUCT. ONLY TYPE II PRODUCTS SHALL BE USED ONBOARD SUBMARINES. SEE PARAGRAPH 12 BELOW FOR IMPORTANT NOTES RELATING PROPER MAINTENANCE OF WEAR RESISTANT TILES.
8. THESE COVERING SYSTEMS CHANGES AND UPDATES HAVE BEEN INCORPORATED INTO A DRAFT REVISION TO REF B CURRENTLY BEING CIRCULATED FOR COMMENT, WITH A TARGET DATE FOR FINAL APPROVAL AND ISSUE OF 30 SEP 06.
9. IMPORTANT SAFETY NOTE FOR DECK SEALING AND FINISHING MATERIALS: THE NAVY DOES NOT HAVE A MILITARY SPECIFICATION FOR DECK SEALING, WAXING, AND OTHER FINISH COATING MATERIALS. SINCE ALL COATINGS AND SEALERS BEING APPLIED TO DECK COVERINGS ONBOARD NAVY SHIPS (EITHER DURING INITIAL INSTALLATION OR DURING FOLLOW-ON MAINTENANCE) MUST MEET THE FIRE PERFORMANCE REQUIREMENTS OF MIL-STD-1623, AND (IF BEING INSTALLED ON SUBMARINES), THE OFF-GASSING REQUIREMENTS OF REFERENCE C, SEALING AND FINISHING MATERIALS SHALL BE THE SEALERS QUALIFIED AND TESTED AS PART OF THE DECK COVERING SYSTEM. THE SEALER SHALL BE FROM THE SAME MANUFACTURER AS THE DECK COVERING SYSTEM. USE OF THIRD PARTY SEALERS IS NOT ALLOWED. ADDITIONALLY, SEALANT PRODUCTS CONTAINING FREE ISOCYANATES (I.E. POLYURETHANE OR POLYUREA BASED PRODUCTS) SHALL NOT BE APPLIED BY SHIPS FORCE PERSONNEL. RESEALING OF POLYURETHANE DECK SYSTEMS MUST BE ACCOMPLISHED PIERSIDE BY PROPERLY TRAINED AND PROTECTS CONTRACTORS OR SHIPYARD PERSONNEL.
10. A NEW DECK COVERINGS STANDARD ITEM, 009-26, HAS BEEN DEVELOPED AND IS AVAILABLE FOR USE. THIS STANDARD ITEM WILL BE REQUIRED TO BE INVOKED BY ALL NEW DECK INSTALLATION AND REPAIR CONTRACTS BEING AWARDED STARTING 1 OCT 2006.

11. IMPORTANT REMINDERS RELATING TO CARE AND MAINTENANCE OF WEAR RESISTANT DECK TILES:

- A. THESE TILE SYSTEMS REPRESENT A SIGNIFICANT IMPROVEMENT OVER LEGACY DECK TILE SYSTEMS. THEY ARE EXTREMELY DURABLE, WITH A WEAR LAYER EQUIVALENT TO 25MM OF MARBLE. THEY ARE FLEXIBLE AND LIGHTWEIGHT. THE DECK SYSTEM WEIGHS APPROXIMATELY 2.5 LBS PER FT² COMPARED TO APPROXIMATELY 4 LBS PER FT² FOR VINYL COMPOSITION TILE OR PRC. THE CLEAR WEAR LAYER WILL NOT YELLOW WITH AGE OR WEAR. IT HAS VERY LOW SMOKE DENSITY AND TOXICITY. (EXCEEDS THE STRINGENT 1997 SOLAS MARINE SAFETY REQUIREMENTS). IT IS HIGHLY RESISTANT TO CHEMICAL STAINING BY ALL COMMON AGENTS. THE TILE IS DESIGNED FOR A 10-YEAR SERVICE LIFE.
- B. TO PREVENT POTENTIAL TILE ADHESION PROBLEMS, ONLY UNDERLAYMENT MEETING THE REQUIREMENTS OF MIL-PRF-3135, TYPE II, CLASS 2 (EPOXY BASED UNDERLAY) MAY BE APPLIED UNDER WEAR RESISTANT TILES. CLASS 1 UNDERLAYMENT (LATEX BASED UNDERLAY) MAY NOT BE USED.
- C. ALL COMMANDING OFFICERS AND OTHER SHIP'S PERSONNEL NEED TO BE AWARE THAT THESE TILE SYSTEMS ARE DESIGNED TO BE WAX-FREE TO REDUCE ANNUAL SAILOR WORKLOAD. THEY HAVE A MATTE APPEARANCE, WHICH HAS BEEN DELIBERATELY CHOSEN TO ENHANCE APPEARANCE AND MINIMIZE MAINTENANCE. WAXING IS NOT REQUIRED OR DESIRED. ATTEMPTS TO WAX THESE TILES WILL CAUSE A POOR APPEARANCE OF THE DECK, AS THE WAX WILL NOT ADHERE TO THE TILE SURFACE. THIS LOWER GLOSS APPEARANCE DOES NOT MEAN THE TILES ARE DIRTY.
- D. WHEN SUBJECTED TO PETROLEUM PRODUCTS, TILES WILL CURL AND DETACH FROM THE ADHESIVE. COSMETIC POLYMERIC DECKING MATERIALS ARE PREFERRED IN AREAS WHERE PETROLEUM PRODUCTS COULD POTENTIALLY LEAK ONTO THE SURFACE OF THE TILE (E.G. VIA SOUNDING TUBES OR TANK TOP COVERS). WEAR RESISTANT DECK TILE REMAINS AN OPTION IN THESE AREAS; HOWEVER IF THERE IS A PETROLEUM PRODUCT SPILL THE TILE WILL FAIL IN THE AREAS IN WHICH THE PETROLEUM PRODUCT HAS CONTACTED IT.
- E. REPAIR PROCEDURES FOR REPLACEMENT OF DAMAGED TILES ARE CONTAINED IN PRESERVATION PROCESS INSTRUCTION 63421-002.
- F. ROUTINE CLEANING INSTRUCTIONS AND PERIODICITY ARE CONTAINED IN MAINTENANCE REQUIREMENTS CARD C4 9RTY U, TITLED "CLEAN INTERIOR DECKS."
- G. SPILLS OF WATER, GREASE, FOOD, CHEMICALS AND OTHER FOREIGN MATERIALS CAN CAUSE SLIPPERINESS. WIPE UP SPILLS IMMEDIATELY WITH AN ABSORBENT CLOTH AND THEN WASH THOROUGHLY WITH A PROPERLY DILUTED NEUTRAL OR MILDLY ALKALINE DETERGENT UNTIL COMPLETELY CLEAN. RINSE WITH FRESH WATER

- AND ALLOW TO DRY.
- H. HARSH CHEMICAL CLEANERS SHOULD NOT BE USED TO CLEAN THE TILES. MANY FURNITURE POLISHES AND GLASS CLEANERS CONTAIN CHEMICALS WHICH IN CONTACT WITH THE TILE MAY CAUSE SEVERE SLIPPERINESS. OVER SPRAY, EVEN IN SMALL AMOUNTS, CAN CREATE A HAZARD.
 - I. ADDITIONALLY, FURNITURE AND OTHER HEAVY EQUIPMENT MUST NOT BE DRAGGED ACROSS THE SURFACE, AS THIS MAY GOUGE THE TILE THROUGH THE COLORED FINISH LAYER. CARE SHOULD BE TAKEN TO ENSURE CHAIR LEGS, ETC. ARE PROTECTED TO PREVENT SCRATCHING THE TILES.
 - J. WHEN CLEANING, PICK UP LITTER AND SWEEP THE DECK TO REMOVE DEBRIS USING A NON-IMPREGNATED DUST MOP. IN CONDITIONS OF HEAVY SOILING, CARRY OUT A PRE-WASH BY PREPARING A SOLUTION OF A NEUTRAL DETERGENT DILUTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. USING A TWO BUCKET SWABBING SYSTEM APPLY SOLUTION USING A SUITABLE SWAB THAT HAS BEEN WELL WRUNG TO REMOVE EXCESS LIQUID. RECHARGE THE SWAB FREQUENTLY AND CHANGE THE SOLUTION AS NECESSARY. ALLOW TO DRY THOROUGHLY. A SCRUBBER CAN ALSO BE USED FOR CLEANING. IF IT IS USED, IT SHOULD BE FITTED WITH A 3M BLUE PAD AND A NEUTRAL DETERGENT USED DILUTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. SPRAY BUFFING MAY ALSO BE USED TO MAINTAIN THE SURFACE APPEARANCE. PREPARE A SOLUTION OF NEUTRAL DETERGENT AND DISPENSE INTO A SUITABLE SPRAY CANISTER. APPLY A FINE SPRAY OF LIQUID ONTO APPROXIMATELY 20 FT² OF DECK. USING A ROTARY BUFFING MACHINE (APPROX 450 RPM) FITTED WITH A BLUE 3M PAD, WORK IN PARALLEL OVERLAPPING PASSES UNTIL THE DECK IS CLEAN AND JUST DRY. DO NOT CONTINUE TO BUFF AFTER THE DECK HAS DRIED. HIGH SPEED BUFFERS SHALL NOT BE USED AS THEY WILL GENERATE EXCESS HEAT AND DAMAGE THE TILE SYSTEM.
 - K. SOME MANUFACTURER RECOMMENDED NEUTRAL DETERGENTS INCLUDE:
JOHNSONS STRIDE 1000
HENKEL SILKY ONXX
BUTCHER'S SUNDANCE
WETROK REMOP
LEVER EXOTOL
BRITISH NOVA LIQUID 99
 - L. ALTERNATIVE MAINTENANCE PRODUCTS MAY LEAVE SURFACE RESIDUES WHICH DETRACT FROM THE APPEARANCE AND MAY BE SLIPPERY. //

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