

# Welding guide on unitor

[Science](#), [Chemistry](#)



SAFETY IN WELDING A Safe Journey with UNITOR Norwegian Training Center - Manila A SAFE JOURNEY WITH UNITOR Welding and Flame Cutting elsewhere than in workshop should be the subject of a “ HOT WORK PERMIT” A Safe Journey with UNITOR 2 Norwegian Training Center - Manila Production welding is done under optimum conditions. The appropriate equipment is provided for and the specification are set. A Safe Journey with UNITOR 3 Norwegian Training Center - Manila Maintenance and repair welding onboard involves a host of unknowns.

Problems relate to chemical composition of the base metals, weldability, pre and post heat, choice of electrode, and the handicaps of field welding. A Safe Journey with UNITOR 4 Norwegian Training Center - Manila PROTECT THE EYES Never expose bare eyes to the glare and rays from the ARC! This will cause arc-eye (very painful) and damage to the eyes. Use filter glass of correct grade. Amperage Below 20 A 20 – 40 A 40 – 80 A 80 – 175 A 175 – 300 A 300 – 500 A A Safe Journey with UNITOR Grade 8 9 10 11 12 13 5 Norwegian Training Center - Manila A Safe Journey with UNITOR 6

Norwegian Training Center - Manila Train the crew to do the repair welding work themselves instead of subcontracting it away. A Safe Journey with UNITOR 7 Norwegian Training Center - Manila What about your welding technique? Could you need a bit of time at the welding school? A Safe Journey with UNITOR 8 Norwegian Training Center - Manila Both welding cable and return cable should be stretched to the welding site Remember that if you connect the return cable in the ships structure you are actually standing on the return current A Safe Journey with UNITOR 9 Norwegian Training Center - Manila

Place the return clamp as near to where the welding takes place as possible. If you don't, the return current might travel through ball bearings and other critical machine parts and destroy them. A Safe Journey with UNITOR 10 Norwegian Training Center - Manila If you are a smoker remember that disposable plastic cigarette lighters kept in pockets may cost you your life on a welding job. Should a spark fall into your pocket the lighter may explode, resulting in extensive, even fatal burns. Always leave your lighter behind when you shall weld. A Safe Journey with UNITOR 11

Norwegian Training Center - Manila Prevent sparks dropping down hatchways or hold ventilators. Keep fire extinguishers ready. A Safe Journey with UNITOR 12 Norwegian Training Center - Manila Before hot work is begun, check that there are no combustible solids, liquids or gases, at below or adjacent to welding area. A Safe Journey with UNITOR 13 Norwegian Training Center - Manila Remember that protective clothing is not only meant to protect you from burns spatter and arc radiation but also serves as an insulator so you don't become part of the electric circuit A Safe Journey with UNITOR 14

Norwegian Training Center - Manila Hoses and cables should be kept clear of passage ways. A Safe Journey with UNITOR 15 Norwegian Training Center - Manila To work with worn or damaged welding cables is extremely dangerous. Inspect the condition of the cables regularly. Worn cables should be replaced, not " Repaired" with insulation tape. If the damage is local the damaged part should be cut away and the cable joined with a cable connector. A Safe Journey with UNITOR 16 Norwegian Training Center -

Manila Be sure you never get any electric shock when using electric equipment.

A Safe Journey with UNITOR 17 Norwegian Training Center - Manila DO NOT lean directly on to the structure if the return current runs through it, but make sure to insulate yourself using either a RUBBER MAT or WOOD. A Safe Journey with UNITOR 18 Norwegian Training Center - Manila In no circumstances should a welder work while standing in water. Water and electricity do not mix. A Safe Journey with UNITOR 19 Norwegian Training Center - Manila DO NOT weld on drums or tanks before they are cleaned and made absolutely gas free. A Safe Journey with UNITOR 20 Norwegian Training Center - Manila

Poisonous gas might develop during welding caused by elements in the base materials or due to paints and metal coatings on the surface. A Safe Journey with UNITOR 21 Norwegian Training Center - Manila HAVE ELECTRODES BEEN PROPERLY STORED? If electrodes are left in the open air they start to attract moisture. When the electrode is used the moisture in the coating goes over as Hydrogen Porosity in the weld. This will in time develop into Hydrogen Cracking. A Safe Journey with UNITOR 22 Norwegian Training Center - Manila WHY IS IT THAT THE WELD I DID ONE WEEK AGO HAVE CRACKED. A Safe Journey with UNITOR 23