

ISO CE Mark Category A “Ocean” Rating What Does IT Mean?

MJM made it a primary objective that all MJMs would be certified at the highest level of safety possible... which meant MJMs are ISO CE Certified Category B “Offshore” or, in the case of the 40z, 50z and 53z, they are Certified ISO CE Category A “Ocean”.

There are no other boats of their type, of any size, achieving this high level of offshore safety. In fact, the only two 40 foot designs we've identified in the worldwide database of the International Marine Certification Institute (IMCI) are the MJM 40z and the Nordhavn 40. The former achieves this with a low vertical center of gravity and the latter massive tonnage.

What does ISO Certification mean, and how should it affect one's peace-of-mind on the water? Let's take a look at the subject.



The MJM Yachts 40z running downsea in 6-8 footers at 25 knots.

When the European Union started in 1998, a Recreational Craft Directive was developed to set design/building

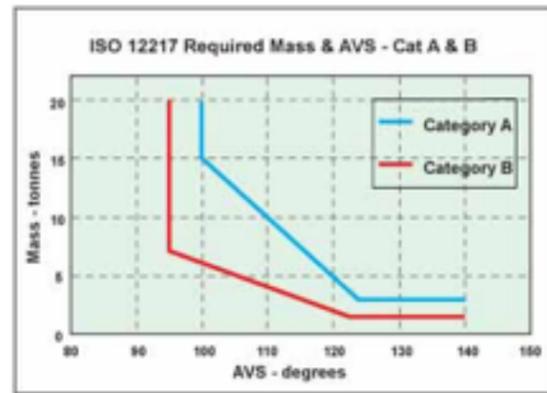
standards for recreational boats up to 24 meters (79 feet). New and used boats sold in Europe, including boats built in the US or anywhere else being exported to Europe, had to be certified as complying with one of four design categories for seaworthiness. These categories are based on factors such as the wave height and wind speed a given design is capable of handling, plus hull scantlings/strength and stability.

In essence, the further offshore a vessel is expected to venture, the greater the requirements for the vessel's construction strength, stability, reserve buoyancy, resistance to flooding, deck drainage, crew safety, and other seaworthiness criteria have to be. Here are the four categories.

*

Category A -- Ocean – This is the category with the toughest standards and covers vessels 40' and over designed to be self-sufficient for extended voyages. It is defined as the “category of boats considered suitable for seas of up to 7 meters (23 feet) significant wave height and winds of Beaufort Force 9 (41-47 knots) or less, but excluding abnormal conditions such as hurricanes.

Category B -- Offshore – These boats are designed to go offshore with the ability to handle winds up to gale force 8 of 40 knots, and seas up to 13' (3.96m).



This chart shows a boat's displacement and the Angle of Vanishing Stability (AVS) as indicated on its Gz Curve.

The difference between Category A & B is shown in the above graphic. Where Mass is tons and AVS is the Angle of Vanishing Stability when the boat goes upside down. Category A boats need to be to the right of and above the blue line and a Category B boats to the right and above the red line.

Category C -- Inshore – These boats may venture away from the protected harbors, but within striking distance of home... operating in coastal waters or large bays and lakes with winds up to 27 knots with and significant seas 8' (2.44m) high.

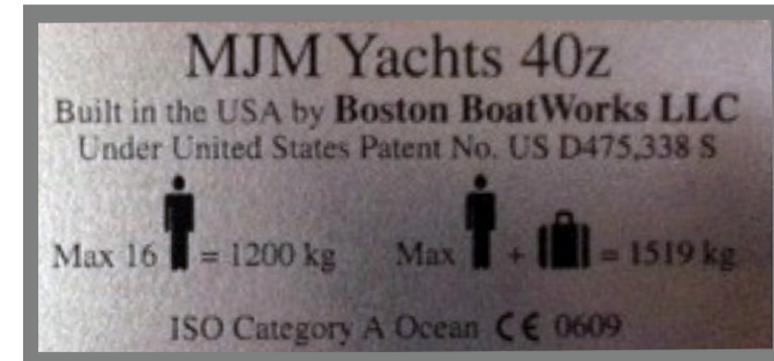
Category D -- Inland or sheltered coastal waters – These are your typical day boats, operating in protected harbors, small lakes and rivers with winds to Force 4 (up to 16 knots) and significant wave heights to 4' (1.22m).

An Important Note

While a builder may claim that a boat is designed to a certain standard, it doesn't necessarily mean that it ends up being built to it, unless inspected and certified by an IMCI (International Marine Certification Institute) Surveyor, AND the builder can show you this plaque affixed to a bulkhead.

Because the number of people in the boat can reduce stability, the plaque shows the max number of people for Category A conditions, which on the 40z is 16. That's not a USCG limit for liability purposes at all times. That's just for Category A conditions.

Good story here. When Bob Johnstone was told that the 50z could carry only 2 more people under Category A than the 40z (18 vs. 16), he was concerned about losing a 50z sale to a 40z owner who was moving up, because he wanted to be able to take 20 or so friends on the ICW to eat at Coconuts Restaurant near Bahia Mar... and might be concerned about the liability. “No worries”, said the IMCI Surveyor, “We can provide the 50z with a ‘B’ rating as well as an ‘A’ rating, showing he can carry 30 people...and if he's just going down the ICW or close to shore, you can post a ‘C’ rating, too, showing a capacity for 50 people.” Bob thought was going a bit too far and was happy to settle with the following plaque for the 50z.



IMPACT ON DESIGN AND MANUFACTURING?

MJM Yachts is dedicated to producing the safest, strongest and most durable yachts possible. For this reason, while those under 40 feet can only be rated "B", each of our powerboats is designed and built to exceed small craft structural requirements for ISO Category A "Ocean". ISO requirements for strength are based on a design's top speed and the expected impact to be absorbed by hull bottom and sides, as well as decks, bulkheads, structural grid, and any part of the vessel's structure. The laminate schedule and materials are then specified to meet such stringent requirements.



The MJM Yachts 50z cruising off the coast of Newport, Rhode Island at 34 knots.

The most influential factor in a vessel's initial (static) stability is Metacentric Height (GM). This is the distance between Metacenter (M), the location of which is fixed by a vessel's form stability and Vertical Center of Gravity (VCG). VCG is determined by the vessel's shape and quality of construction. The lower the VCG, the more stable the vessel. That's the key to MJMs. By using stronger, lighter epoxy composite laminates, and narrower waterline beams, VCG is lowered, making the GM greater than is possible on other conventional polyester- and vinylester-built powerboats. MJMs have exceptional at-rest and sea keeping stability characteristics.

THAT'S NOT ALL...

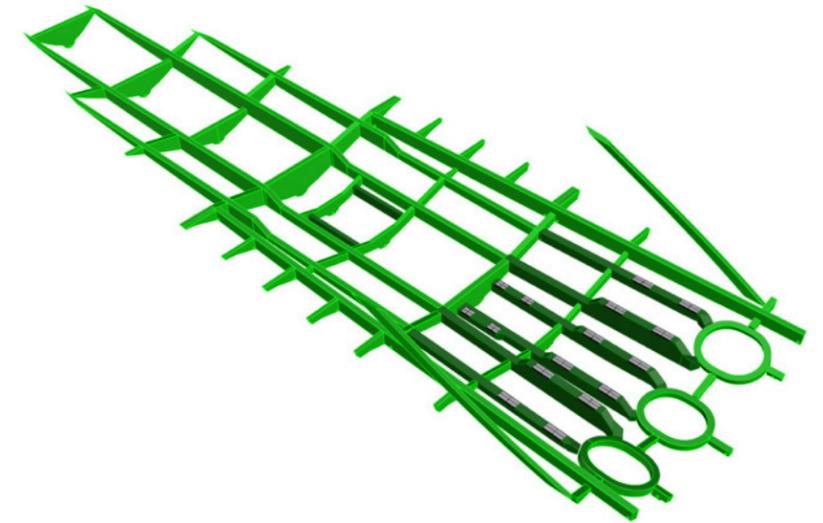
ISO CE certification also takes into account engine emissions. In a world where greenhouse emissions are taking their toll on our environment, this is an important point. Meeting strict ISO CE emissions standards is comparable to meeting similar US CARB requirements.

Additionally, sound levels come into play. Boats are limited to 75 decibels for a single engine and 78 decibels for twin, triple or quad installations from a distance of 25 meters.

HIGHEST STANDARDS FOR MJM YACHTS

MJM meets and exceeds all applicable standards, because ISO CE standards are more stringent than those of the United States Coast Guard (USCG), American Boat and Yacht Council (ABYC), or National Marine Manufacturers Association (NMMA) which mirror ABYC.

Boats sold in the U.S. do not have to be ISO CE Certified which costs upwards of \$20,000 per model. USCG regulations require safety items such as PFDs and flares, carrying capacity for boats under 26' (7.93m), and level flotation if swamped for boats 20' (6.1m) and under. ABYC has distributed American versions of ISO CE Standards and Recommendations, but, they are strictly voluntary. Most critically, there are no ABYC design categories to differentiate between boats of different capabilities suitable to differing sea and wind conditions.



The CAD drawing of the structural grid for an MJM 50z to be fitted with triple Volvo Penta IPS 600's

NMMA certification in the U.S. requires only about 70% of the ABYC recommended standards. While most U.S. builders follow the ABYC standards, and indeed many exceed those required by the NMMA, they are not mandatory as is the case in Europe with ISO CE Mark standards and don't involve the cost and post build survey inspection of ISO.

CONCLUSION

The MJM Category A "Ocean" certification ensures MJM owners are boating on a stronger, more stable yacht, designed and built to exceed the highest standards in the world. It means having the peace of mind that comes with knowing that should you find yourself in weather and sea conditions outside your prior boating experience, you will be in one of the safest powerboats in the world. At sea, that comfort is the most important form of comfort a yacht can have.