

# Propeller Inspection with PropCad 2018

*Improve your inspection workflow with the latest tools*

Propellers, even new propellers, are never perfect. It is common practice to inspect marine propellers during manufacture or repair to allow technicians to certify the propeller is within tolerance of the intended design. Inspection is a critical step in delivering high performance, quality-controlled propellers.

PropCad has many valuable features for propeller inspection. As of 2018, all editions of PropCad include several inspection documents that summarize the design data and inspection locations for propeller technicians.

## Inspection Maps

PropCad includes four inspection maps for determining inspection point location and inspection values for thickness and local pitch. These maps produce a template of the developed blade outline, which can often be directly laid on top of constant pitch propellers to approximate the inspection point position. Alternatively, the location maps can provide the exact location in 3D space. The inspection maps that are now featured in PropCad Premium include:

- **Thickness map** – This template provides the local thickness values of the blade at each inspection point. The maximum thickness is also identified and labeled separately.
- **Local pitch map** – This template provides the measured value of local pitch for a segment of the blade surface at each inspection point.
- **XYZ location map** – This template provides the coordinates of the inspection points in a Cartesian coordinate system. Each inspection point has an X value representing the axial height of the blade at a specified Y and Z ordinate from the shaft axis.
- **X-R-Theta location map** - This template provides the coordinates of the inspection points in a cylindrical coordinate system. Each inspection point has an X value representing the axial height of the blade at a specified radius (R) and angle (Theta) from the shaft axis.

## Inspection Reference File

Many propeller manufacturers and propeller repair shops use digital pitchometers for propeller inspection. These pitchometers implement some of the ISO-484 rules for propeller manufacturing tolerances. While they detect differences between the blades, they do not reveal anything about the original design data for the propeller. PropCad 2018 can export *Inspection Reference Files* for *TrueProp Propeller Inspection Software* (\*.TREF) as well as other formats (\*.PPP).

## ISO-484 Inspection Data and Tolerances

The inspection values can be very different from the propeller's design data. PropCad can package and export the relevant design data and applicable ISO-484 tolerances for inspection compliance, simplifying the jobs of manufacturers and repair professionals who previously certified propellers manually without a digital device.

## **About HydroComp**

Since 1984, HydroComp has been a leader in providing hydrodynamic software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. Through its unique array of software packages and services, HydroComp serves over 700 naval architectural firms, shipyards, yacht owners, ship operators, propeller designers, universities and militaries around the globe.

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