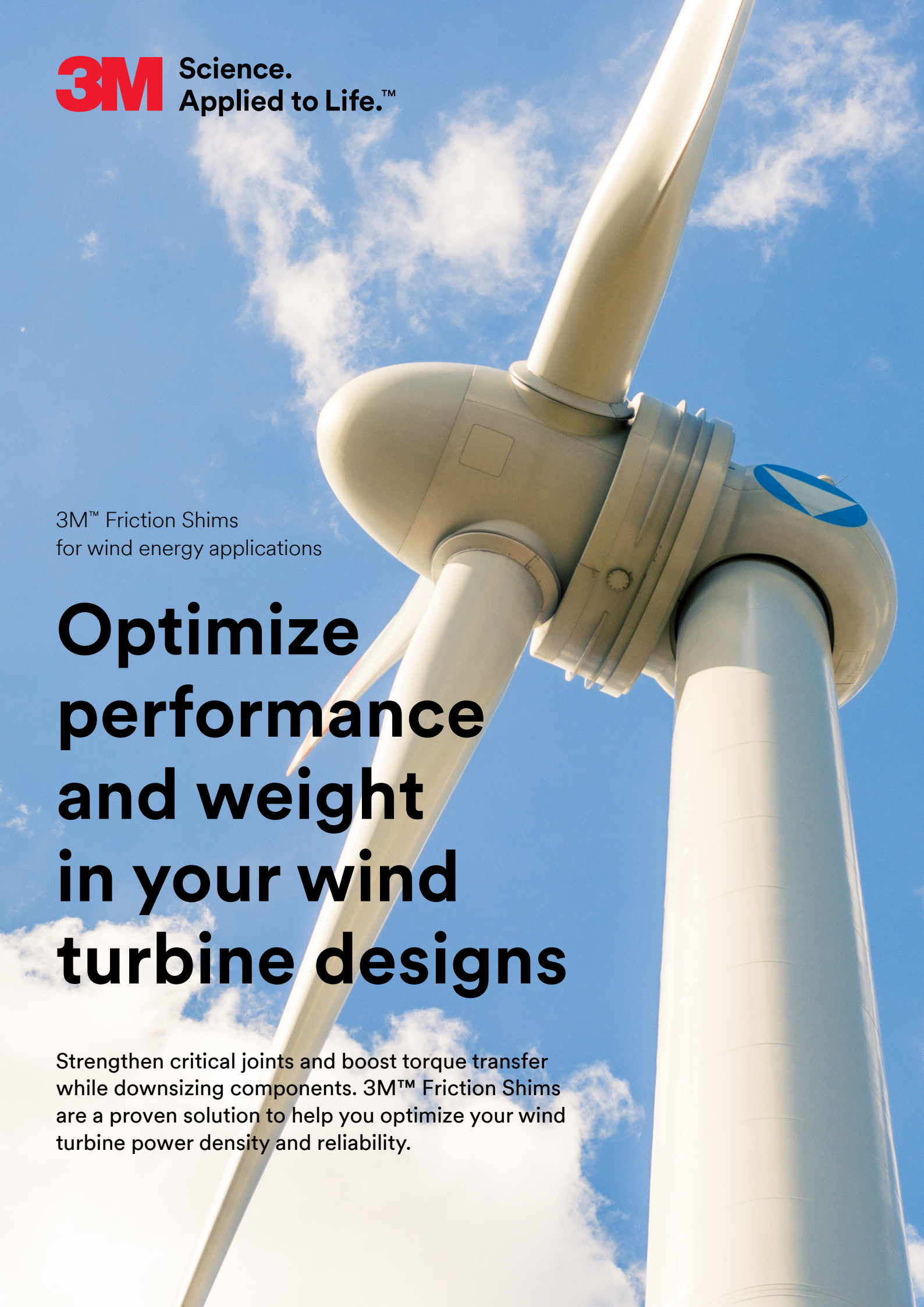
3M Science. Applied to Life.™

3M™ Friction Shims
for wind energy applications

Optimize performance and weight in your wind turbine designs

Strengthen critical joints and boost torque transfer while downsizing components. 3M™ Friction Shims are a proven solution to help you optimize your wind turbine power density and reliability.



Key benefits

- Boost torque transfer
- Optimize power density
- Enhance reliability
- Downsize components
- Simplify your design

Applications

3M™ Friction Shims are used in flanges, bolted connections on the bed plate, fasteners, brakes and other turbine components. They can enhance the coefficient of static friction by up to 5× for improved performance and reliability at peak loads. By boosting torque transfer rates, they help optimize power density. By helping strengthen and stabilize connections, they enable small bolts and flanges to handle the same or greater torques as larger, heavier components. This allows for weight reduction without any loss in performance or reliability.

Component downsizing

3M™ Friction Shims are effective for helping wind farm operators reduce weight in wind energy applications. The addition of 3M shims has been used to help remove the spacer ring in a turbine rotor shaft and attach the connecting flange to the gear unit with a series of bolts. Leaving out the spacer ring helped reduce weight by approximately 2 tons and produced an estimated cost saving of 5,000 euros. Eliminating the second row of screw connections reduced weight by approximately 200 kg. These modifications enabled the use of a smaller gear unit flange with a smaller shaft, saving wind farm operators an additional 1 ton of weight.

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