SKALNAV

esa BUSINESS INCUBATION CENTRE Northern Germany

Participating in
ESA BIC Northern Germany

A DECISION GUIDE FOR ENGINEERING LEADS

Make the case for your engineering team.

Shell-buckling evaluation with a traceable technical basis.

Three practical outcomes

Compare methods

Inspect MDC beside an applicable reference method for the same shell and load case.

Explore sensitivity

Study how assumed or measured imperfections affect the assessment and indicative sizing.

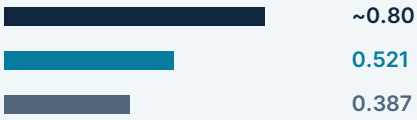
Document decisions

Issue a report with inputs, method, design basis, warnings and engine version.

A published test, compared on the same basis.

Aluminium cylinder · axial compression
R 500 mm · L 600 mm · t 1.5 mm
Imperfection w/t about 0.30 [1]

Load ratio / classical elastic load



In this case, MDC gives a less conservative estimate than NASA SP-8007 and remains below the reported test. The comparison applies to this specimen and these assumptions.

Evaluate on one agreed case before a wider rollout

1 Agree the case

Set the geometry, loads, evidence, applicable methods and success criteria.

2 Compare and review

Review results, limits, documentation and actual engineering effort.

3 Decide the next step

Assess technical fit, onboarding needs and the appropriate licence.

Choose a starting point

Explorer	30-Day Project Access	Professional
Free · no login	€1,699	€9,900 / year
Cylinder axial & bending	Professional · one user · fixed term	One named user · team plans available

Commercial prices exclude VAT. The €1,699 Project Access fee is credited once against the first Professional annual licence when ordered during active access; full terms apply.

Estimate value using your own figures

Illustration: €9,900 ÷ €1,500/engineering day = **6.6 days/year**. Not a measured saving; allow for onboarding and work that remains necessary.

Open the free Explorer · Calculate break-even · Discuss your case

Skalnav GmbH · Germany-hosted · Public preview. Check security & procurement and method scope. Project acceptance follows your verification plan.

[1] Wagner et al., Proc. R. Soc. A (2025), §3(a), Fig. 15. [2] NASA/SP-8007-2020/REV 2, Eqs. 9–10. MDC P01: empirical first percentile. Poisson ratio 0.30 assumed. 17 Nov 2026 · v1.