

Equipment Compliance Certification and Inspection Solutions

Comaea Focus on safety: C002 Padeye / Lifting Lug – PART1

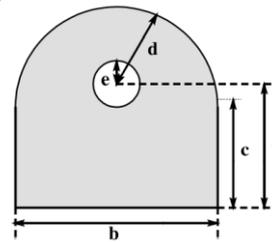
What are they?

Padeye / Lifting Lug: A specifically designed anchor point used in a variety of situations from:

- a) Lifting
- b) Pulling
- c) Connecting
- d) Fall Arrestor
- e) Lifting lug on Containers and baskets

Inspections required for Padeyes involved in Lifting:
 Visual Inspection, NDT of Critical Areas, Load Testing,
 And Stress / Strength analysis of the Padeye **AND structure**

General Lifting Lug (GEN-LL):



Height of Pad Eye = a
 Width of Pad Eye = b
 Vertical Distance = c
 Shape Radius = d
 Hole Radius = e
 Pad Eye Thickness = f
 (not shown)

Discussion points:

WHAT constitutes a padeye under local regulations? Many baskets, containers and anchors / connectors are a 'Padeye' by design but fall under Different regulations as a unit or under API4G as structural connections – so WHAT do we test? (I have seen many baskets and containers signed off with only padeyes being tested. what about the rest of the structure? The padeye might not fail but the bottom might collapse!

Common sense approach: What weight is lifted and how often? One way to look at this is to consider a number of variables:

- a) **WEIGHT** – is the padeye lifting a known unchangeable weight (Such as a padeye on a set of stairs) or is it involved in variable weights that cannot be easily calculated / allowed for? (Such as an under-crown winch padeye)
- b) **USE** - How often is it used? Does the padeye get used / lifted 20 times a day or 20 times a year?
- c) **DESIGN** – is the padeye and structure specially designed for this role with good FOS, or is it a padeye that just happened to be in the right place?
 - a. **Design Reference and Standard: ASME BTH1 – Lifting equipment design document**

You could question why a padeye used 20 times a year needs NDT or a load test after for just 20 known weight lifts a year – I have seen perfectly good OEM padeyes being blocked/bolted and questionable other methods of lifting being conducted all because of compliance rules that have potentially been misinterpreted.

Common Mistakes in Inspection and Use:

Padeye Critical points: EVERY certificate of inspection I have seen always revolves around the Weld of the padeye. this is potentially (if welded right – which is quite easily seen) the strongest part of the padeye and less prone to failure.

There are TWO common failure points of padeyes

1. The eyelet area
2. The structure it is attached to



There are recorded cases of padeyes 'peeling' inadequate steel plate away from the structure – know what you padeye are connected to!

Padeyes are invariable covered in paint or have shackles fitted through them at the time of inspection – the paint from the eyelet should be removed in order to see the key weak point

The Pin hole is also critical – it should only be large enough to take the shackle pin size for the Padeyes maximum rated SWL, any bigger increases the stress on the eyelet

