

# DROPS IMPERIAL CALCULATOR

INC JOULE

## Classification Dropped Objects Potential Consequences 1ft - 300ft / 0lb to 3lb



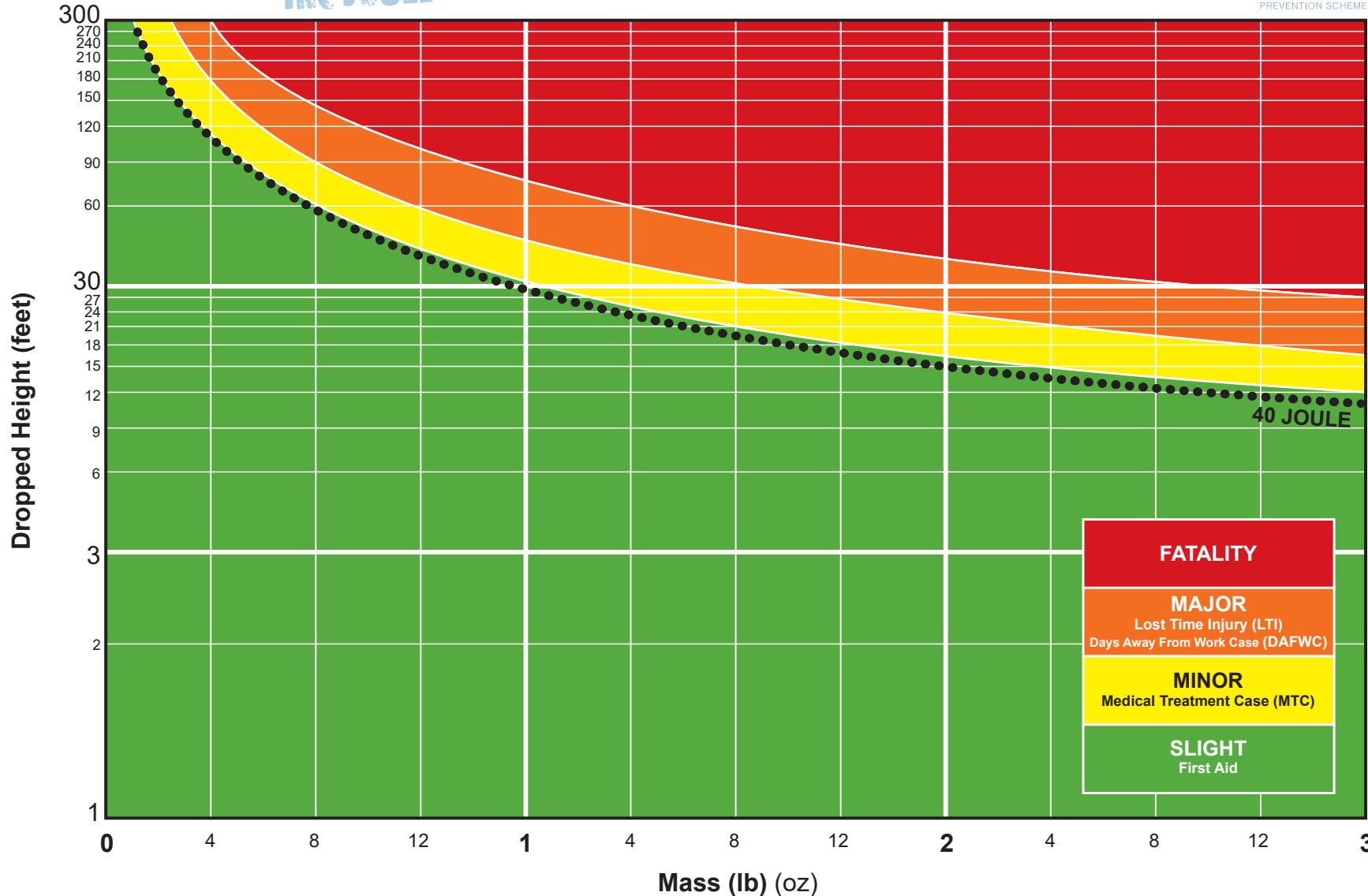
REVISED JUNE 2021

This Calculator provides a common benchmark in the classification of the potential consequences of a dropped object.

One of a number of similar tools, the DROPS Calculator is endorsed by the DROPS Workgroup and recognised by HSE Organisations. While other 'calculators' exist, they all follow the same principle – plotting the mass of a dropped object against the distance it falls to determine its possible consequences.

### Considerations

- With light objects (<0.1 kg) a key influencing factor is the effect of an object punching the skin and damaging tissue/organic functions. The calculator assumes a blunt object so is not compatible with broken glass, metal shards etc.
- The wearing of standard PPE, eg hard hat, safety boots and eye protection, is assumed in the calculator.
- Do not subtract the height of an individual, measure fall distance to solid deck/ ground level.
- DROPS Calculator and other similar tools are guides only providing cursory indication of possible outcome – they are not an accurate prediction.
- In reality, even a small object falling from height can be lethal.



### JOULES AND THE 40 JOULE RULE

The **Joule** is a unit of energy equal to the work done by a force of one newton acting through one metre.

In terms of dropped objects, it is recognised that any blunt object achieving **40 Joules** or more in fall energy is likely to result in a Recordable incident or worse on impact with an *unprotected* human body (eg no PPE).

For example, 200g Machine Bolt falling 27m = 53Joules (0.2[kg] x 27[m] x 9.8[g] = 53J).

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INC JOULE

## Classification Dropped Objects Potential Consequences 1ft - 300ft / 0lb to 22lb



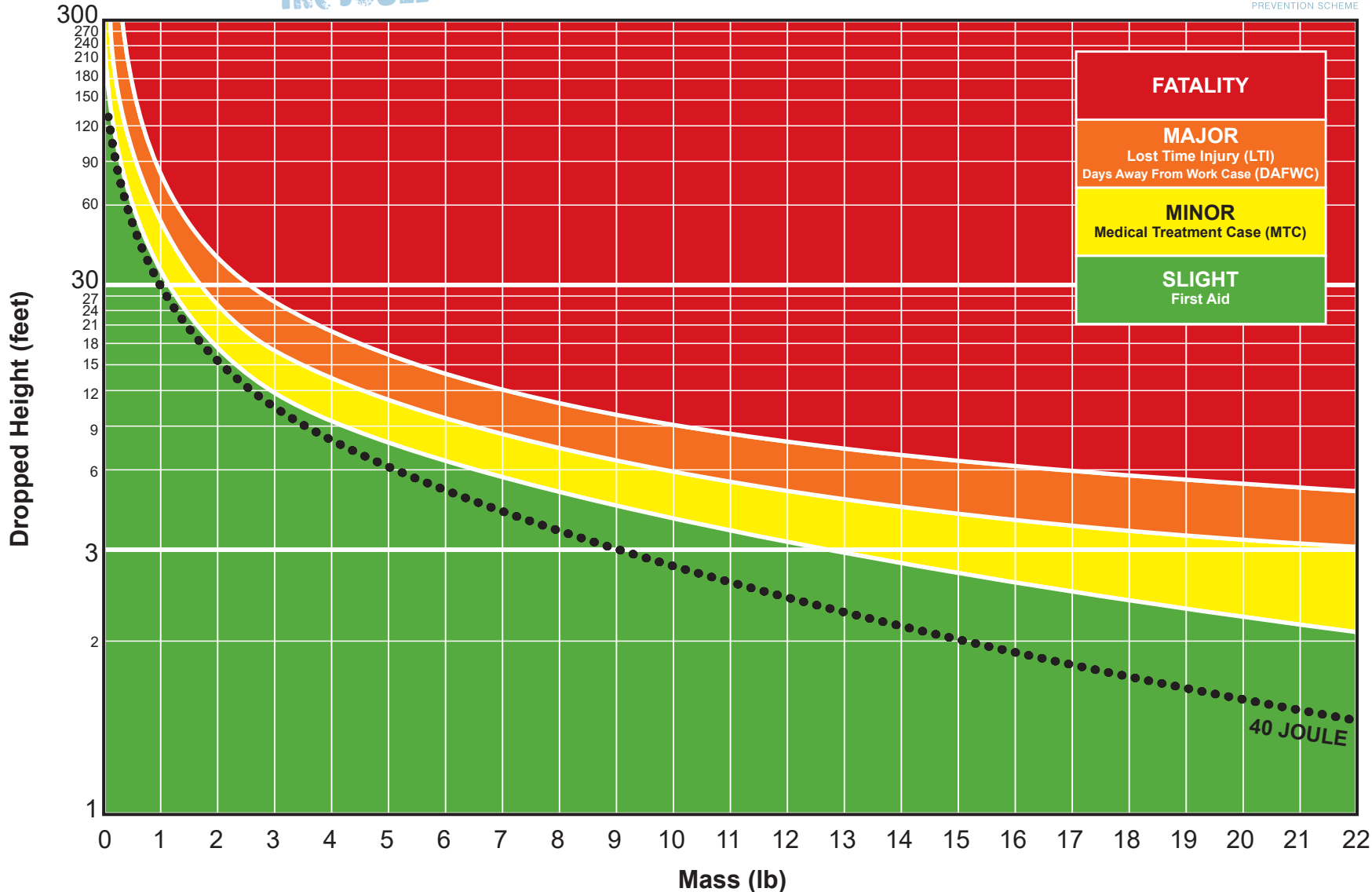
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