G17. Do steel wire rope slings (SWR) or chain slings for use with a suspended basket for lifting personnel need an enhanced factor of safety of the safe working load (SWL)?

The simple answer is no.

When a sling originally rated for goods lifting is used for personnel lifting, it must be **derated by 50 %** to achieve the required **10:1 (SWR) or 8:1 (Chain) Factor of Safety (FOS).** This increased safety factor applies to the sling's **minimum breaking load (MBL),** not the **SWL.** The adjusted safe working load (SWL) is simply half of its original rating.

This is a very common misinterpretation of the standard, EN 14502-1: Cranes-Equipment for the lifting of persons – Part 1: Suspended baskets.

Clauses **5.3.1 (a) and (b)** refer to an enhanced FOS or Coefficient of Utilisation (COU), in terms of the **MBL** of the sling. (For the sake of this FAQ, **FOS** will be used).

The MBL for goods lifting slings is:

- Chain : FOS = 4:1 (4 x SWL)
- Steel wire rope (SWR): FOS = 5:1 (5 x SWL)

When equipment is used for lifting personnel, the **FOS is doubled** to provide the increased level of safety required. Therefore, the FOS to be applied to the MBL is now:

- Chain: FOS = 8:1
- SWR: FOS = 10:1

We can see this using the equation found in EN 14502-1: Clause 5.3.1:

(10 × SWR) or (8 x Chain) x (weight of basket + rated capacity)

This worked example is for a SWR sling.

Weight of basket = **250 kg**
Rated capacity (person + tools) = **125 kg**
Required MBL of SWR = 10 × (250kg + 125kg) = **3,750 kg**

Therefore, for personnel lifting we require a SWR sling with a MBL of 3,750kg, applying a FOS of 10:1 gives a **SWL of 375 kg.**

(If the same sling were used for goods lifting, the **SWL would be 750 kg @ FOS 5 : 1**.)

In Summary:

When selecting a wire rope or chain sling for personnel lifting in accordance with EN 14502-1, first identify the safe working load (SWL) required for the lift. Then select a sling with at least double that SWL, ensuring it achieves the enhanced factor of safety required for personnel use (10:1 for wire rope or 8:1 for chain).

FAQ No:	G17	Approved By:	LEEA Technical Committee
Revision:	2	Date:	22/10/2025
Author:	BW	LEEA ICS Ref:	53.020.30
Date Published:	23/10/2025		

Please note: The content of the guidance in these frequently asked questions is provided for general information only. Whilst they are intended to represent a standard of good practice, they have no legal status and compliance with them does not exempt you from compliance with any legal requirements. Although we make reasonable efforts to provide accurate guidance, we make no representations, warranties or guarantees, whether express of implied, that the content of the guidance given in these frequently asked questions and our interpretation of the requirements given is accurate, complete or up-to-date. It is therefore responsibility of those with specific duties under the legislation to ensure that they fulfil the obligations imposed on them.

Lifting Equipment Engineers Association

3 Osprey Court
Hinchingbrooke Business Park
Huntingdon PE29 6FN
United Kingdom

Tel: +44 (0) 1480 432801 • Email: mail@leeaint.com