



# SHAD Presentation

## 17<sup>th</sup> June 2014

Working at Height  
Solar PV Installations  
*Paul Dickens*

# Who Are British Gas Solar?

***centrica***



# Solar Installations – Working At Height

## Work at Height Regulations

1. Avoid Working At Height.
2. Prevent falls.
3. Minimise the distance or consequence of a fall.



**PASSIVE/COLLECTIVE vs ACTIVE/PERSONNAL?**

# *The Domestic Market Place*



# *The British Gas Solar Approach*



# Scaffolding

## 1. PRE SELECTION QUESTIONNAIRE

## 2. THE GOLDEN RULES

## 3. SCAFFOLDING HANDBOOK

## 4. TG20:13

## 5. CONTINUAL, ON-GOING MONITORING

**NASC** HSE **CITB**

**Standard unclad independent**

An unclad tubular and fitting scaffolding structure with 2.0m maximum height.

**Design height**

- Maximum height 15m to top of fit

**Maximum loading**

- One lit outlet, plus one lit 10% outlet, per top of fit

Used class	Duty	Maximum loading
3	General purpose	2.0kN/m <sup>2</sup>
4	Heavy duty	3.0kN/m <sup>2</sup>

- Inside boards spaced to 0.75m or as follows (if)
- Foundation design lag load for the class 15.0kN (15.0kN/m<sup>2</sup> distributed as follows)

**Ties**

- 1x tight duty (3.5kN) tie per bay
- Max 2.0m between tie ties (as required at alternate fit)
- Max 4.0m horizontal distance between vertical tie ties

**Location**

Will in the British Isles where the site wind exposure is not adverse as defined in TG20:13 chapter 02.

**Conditions**

To be erected as a TG20 compliant independent scaffolding as described by TG20:13 chapter 03.

- 2 - 5 main boards and up to 2 inside boards wide
- Maximum fit height: 2.8m
- Maximum bay length: 2.8m (load class 3), 1.8m (load class 4)
- Maximum transom spacing: 1.5m (load class 3), 0.9m (load class 4)
- Unclad or with wire or plastic brack guards
- Boarded at any number of fits
- Tied to an impermeable facade (no significant openings)

**Additional features**

- This scaffold may optionally include a TG20 compliant bridge, stairway fit, catwalk fit, loading bay and ladder unless tied to TG20:13 compliance class for each
- Facade braced in every elevation, one support bay
- Ladder braced at alternate standards and as end frames
- Double guard rails at boarded fits (single guard rail permitted at the top fit if required)
- Single guard rails at unboarded fits
- Internal edge protection provided where required
- Tied in accordance with TG20:13 chapter 01

**Sign-off**

Maximum working load  2.0kN/m<sup>2</sup>  3.0kN/m<sup>2</sup>

Company: \_\_\_\_\_ Scaffold reference: \_\_\_\_\_

NASC membership no: \_\_\_\_\_ Site reference: \_\_\_\_\_

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Position: \_\_\_\_\_ Date: \_\_\_\_\_

\* TG20 compliance class for scaffold of greater height and/or other configurations available from the TG20:13 Guide. Visit the HSE document store for the full membership. Go to www.nasc.org.uk to confirm membership.

Annotations on the right side of the form:

- Maximum height
- Maximum loading
- Tie duty and spacing
- Permitted special features
- Maximum dimensions
- Required bracing
- Details of the site and scaffold
- Signature of the responsible individual

# Weather Factors

- Cold Weather = Snow and Ice
  - Normal Weather = Rain!
  - Normal Weather = Wind!



# Weather Factors

Force	Equivalent 10m above ground MPH	Speed Knots	Description	Specifications for use on land
4	13 – 18	11 - 16	Moderate Breeze	Raises Dust and loose paper; small branches are moved
5	19 – 24	17 – 21	Fresh Breeze	Small trees in leaf begin to sway.
6	25 – 31	22 – 27	Strong Breeze	Large branches in motion, whistling heard in telegraph wires.
7	32 – 38	28 – 33	Near Gale	Whole trees in motion, inconvenience felt when walking against the wind

MPH	Knots	M/S	B/fort	Comments
17	15	7.7	force 4	Care to be taken
23	20	10.3	force 5	Assessment to be made by manager
26	23	11.8	force 6	Work stops at more than 2m above ground



# *The Commercial Difference*



# *The Commercial Difference*





# CONCLUSIONS & QUESTIONS