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Introduction

Please read the **Getting Started Guide** which will help you customise SMART Scaffolder before continuing to read this guide.

- Thank you for choosing CADS SMART Scaffolder.
- This user guide explains how to use the **Check IT TG20:13** features of SMART Scaffolder. SMART Scaffolder **Check IT TG20:13** supports your work within TG20:13, published by the National Access and Scaffolding Confederation (NASC). TG20:13 is a guide to good practice for tube-and-fitting and system scaffolding.
- SMART Scaffolder **Check IT TG20:13** simplifies the design process by automatically checking your scaffold against TG20 criteria while you work. SMART Scaffolder conforms to TG20:13 by creating drawings and load lists that comply with the TG20:13 bracing patterns, and by using the TG20:13 tie rules to estimate the number of ties required for a scaffold.

> “Any proposed modification or alteration that takes a scaffold outside the scope of a generally recognised standard configuration should be designed by a competent person and proven by calculation.”
> http://www.hse.gov.uk/construction/scaffoldinginfo.htm
> “Our mission is to prevent death, injury, and ill-health in Great Britain’s working places.”

The **Check IT TG20:13** module summarises, in a printable and exportable format, which of your project scaffolds are compliant scaffolds, which are not and thus may require design, and it offers suggestions and guidance on how to make your project compliant prior to producing your TG20:13 NASC compliance sheet (available through the NASC eGuide software).
## Benefits of SMART Scaffolder Check IT TG20:13

SMART Scaffolder **Check IT TG20:13** has been designed to help your business adopt TG20:13 and cost-effectively meet the requirements of the HSE.

| ✔️ | SMART Scaffolder **Check IT TG20:13** will summarise whether your scaffolds are TG20:13 compliant and are therefore exempt from a structural design |
| ✔️ | Quickly generates a printable and exportable TG20:13 summary report that can be used to confirm that you will be able to obtain a NASC TG20:13 compliance sheet (available from the NASC TG20:13 eGuide or Operational Guide) |
| ✔️ | Helps you to learn TG20:13 as you work, bringing the text of TG20:13 to life with graphics and easy-to-understand compliance summaries and guidance |
| ✔️ | SMART Scaffolder **Check IT TG20:13** helps you to adopt TG20:13 as easily as possible, get the most value from it, and save you time and money by avoiding the need for an engineering design for everyday scaffolding |
| ✔️ | SMART Scaffolder keeps up with the latest changes to TG20, helping you to understand the impact of the changes and to ensure that you continue to conform to the requirements of the HSE |
| ✔️ | SMART Scaffolder offers easy to follow suggestions and guidance for non-compliant scaffolds avoiding accidental non-compliance |
Introducing TG20:13

TG20:13 is a Technical Guidance document published by the NASC – the National Access and Scaffolding Confederation – who are the UK national trade body for access scaffolding.

It was developed by the NASC in response to changing European legislation, which requires every scaffold to be designed by calculation. It would not be practical for every scaffold to be individually designed by an engineer, so TG20:13 aims to solve this problem with its standard scaffold system.

TG20:13 contains a set of definitions for standard scaffolds that have been designed by the NASC: if a scaffold matches one of the standard scaffold definitions then the design from TG20:13 can be reused; if the scaffold does not match any of the standard scaffold definitions then it may require design advice from a structural engineer.

TG20:13 is supplied in four volumes:

- **Operational Guide**: gives guidance on TG20:13 to scaffolding operatives;
- **User Guide**: a quick pocket size reference guide to TG20:13 for a scaffolding operative;
- **Design Guide**: gives guidance on TG20:13 for scaffold designers, with greater detail on compliance;
- **E-Guide**: a digital version of the guide which can check individual scaffolds for compliance.

SMART Scaffolder **Check IT TG20:13** helps you to get the most from TG20:

- ✔ It will summarise TG20:13 compliance for multiple scaffold models simultaneously, showing whether your scaffolds are compliant;
- ✔ It produces a printable report summarising which of your scaffolds need a design;
- ✔ It will help you to learn how TG20:13 works;
- ✔ It will help you identify and resolve non-compliant scaffolds, by offering guidance and suggestions.
Checking TG20:13 compliance

To activate the TG20:13 compliance check features, select the check IT tab.

This module helps you to summarise TG20:13 compliance in four simple steps:

Set the **Wind Factor**;
This tool determines the effect of the wind on your scaffold.

If you already chose a site address with a UK postcode when you first created the project, this will already be set for you.

Set the **Façade Type**;
Specify whether your scaffold is Permeable or Impermeable (tied to a façade with openings or not).

Set the **Loading**;
Specify how much load your scaffold needs to support.

Run the final summary report to review your scaffolds TG20:13 compliance.
Wind factor

The site **Wind Factor** is essential to determine the maximum safe height of the scaffold, particularly where sheeting or debris netting are used.

There are four methods for setting the Wind Factor, dependent on your internet connection availability. Choose **one** of the below:

A. You can enter the site address including a UK postcode;

B. You can enter the UK postcode of the site where the scaffold will be erected;

   ![Thumb up] If you already chose a site address with a UK postcode when you first created the project, this will already be set for you. You can move to the next step.

C. With internet connectivity, you can select a map location and **Check IT TG20:13** will calculate the Wind Factor and Topography automatically;

D. Without internet connectivity, you can select a map location and manually enter the Topography and Seasonal Factors.
Choose ONE of the following to set the Wind Factor:

**A: Using a UK site address with a UK postcode**

- Click the arrow located beneath the Wind Factor image, avoiding selecting the top half (which has an image, but no text);
- Select the Set the Site Address button;
- Enter the site address, including a valid UK postcode and click the green **Apply** tick button;

**B: Using a UK postcode**

- Click the arrow located beneath the Wind Factor image, avoiding selecting the top half (which has an image, but no text);
- Type the postcode into the text box which appears;
- Click the **Lookup** button or press **Enter**;
- If the postcode is successfully recognised a tick will be displayed and the Wind Factor will be set.
C: Using a map – with internet

- Click the Wind Factor image;
- Using the mouse, left click the red marker and hold down the mouse button whilst you drag the marker to your location;
- TG20 Wind Factor and TG20 Topography will automatically update;
- Update the Seasonal Factor by left clicking the mouse in the centre of the Seasonal Factor dial;
- Click the green OK button when finished.
D: Using a map – without internet

- Click the Wind Factor image;
- Using the mouse, left click the red marker and hold down the mouse button whilst you drag the marker to your location;
- Click on the image in the centre dial, ‘TG20 Topography’ to change your landscape (for details, see the NASC TG20:13 Operational Guide);
- For non-flat topography, move the small marker to your site location on the topography feature;
- Update the Seasonal Factor by left clicking the mouse in the centre of the Seasonal Factor dial (for details, see the NASC TG20:13 Operational Guide);
- Click the green OK button when finished.
Choosing the façade type

You can specify whether your scaffold is tied to a permeable façade (an open structure or a façade with a high percentage of openings) or an impermeable façade (a solid building with few openings).

- Click on the Façade Type button;
- Choose the façade type that you require by clicking on your choice from the drop-down list;
- If you choose the permeable type (with openings) the façade will be drawn transparently to remind you that this option has been selected;
- Select each scaffold by hovering the burgundy square over the scaffold and then pressing the left mouse button to apply the façade to all your structures.

It is essential to use this option if your scaffold is tied to a building with a high percentage of openings, to ensure that your scaffold is built with sufficient ties.

Note that sheeted and debris-netted scaffolds must be designed if tied to a permeable façade.
Specifying the scaffold loading

The TG20:13 check is greatly affected by the *loading* that your scaffold is required to support.

By default, **Check IT TG20:13** assumes that your scaffold will be a *General Purpose* scaffold used for most types of building work. This is represented in **Check IT TG20:13** by scaffolders on the loaded lifts:

![A General Purpose TG20:13 scaffold is loaded with 2.0 kN/m² on one lift.]

You can change the working loads, to do this:

- Click the Loading button;
- Click on the load class that you require;
- Move and drop the scaffold and weight icon that appears, using the mouse left hand button, onto a lift. In most cases you will drop the load onto the top lift of each elevation.

This is now a *Heavy Duty* TG20 scaffold, loaded with 3.0 kN/m².

The scaffold load class has a great effect on the TG20:13 check, so be careful to select the correct one, especially if you need heavy-duty loading. In particular the load class can determine the maximum safe height of the scaffold, its maximum width, and the maximum distance between the standards.

Note that, regardless of the load class, TG20:13 requires that inside boards are only very lightly loaded with a maximum load of 0.75 kN/m².
Checking for TG20:13 Compliance

After completing the above steps, you will be able to summarise your project for compliance.

- Click on the TG20:13 Check button;
- The TG20:13 summary report is displayed;
- To return to your model, press the TG20:13 Check button again;
- To print the report, click on the Print or Quick Print buttons.

An example of a TG20:13 non-compliant scaffold report will look like this:

![Example of TG20:13 non-compliant scaffold report]

TG20:13 Summary Report

Check details

<table>
<thead>
<tr>
<th>Contract number</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>0003</td>
<td>08/09/2014</td>
</tr>
</tbody>
</table>

Site details

<table>
<thead>
<tr>
<th>Site address</th>
<th>Surroundings</th>
<th>Wind factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example Name, Example Address Line, Example Town, Example County / State, Example Country, POST CODE</td>
<td>Country</td>
<td>20.6 (low)</td>
</tr>
</tbody>
</table>

Scaffolds which may require a design

The following scaffolds are NOT compliant with TG20:13 and design advice may be required.

<table>
<thead>
<tr>
<th>Scaffold</th>
<th>Advice</th>
</tr>
</thead>
</table>
| Item 1: Free standing tower 1 | Design required because:
  - The maximum base dimension exceeds 1.8m with a working load exceeding 1.50kN/m².
  - The maximum working load exceeds 2.0 kN/m².
  - More than 1 lift is loaded. |
An example of TG20:13 compliant scaffold report will look like this:

---

**Correcting non-compliance**

If your scaffold is not compliant with TG20:13, you will (if possible) be given advice about what you could change to make your scaffold compliant.

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See the **Model IT User Guide** which was shipped with your DVD, for details of how to make either of these changes.
FAQ

Why is the Dead plus imposed leg load the same with double standards?
The Dead plus imposed leg load is the combined load for scaffolds with double standards.

Why does the TG20:13 summary report suggest reducing the maximum bay spacing for my non-compliant scaffold when I already have double standards?
SMART Scaffolder assumes that a lower bay spacing is preferred to double standards, because this usually requires fewer total standards.

- If you reduce the bay spacing as suggested, you can also remove the double standards. Your scaffold will usually remain TG20:13 compliant.
- If you choose not to remove the double standards, following the remaining advice is usually sufficient to achieve TG20:13 compliance.
Using the other SMART Scaffolder products

The best way to use the SMART Scaffolder products is to use them together. Every product is designed to enhance the rest of the suite.

SMART Scaffolder Check IT TG20:13 can be used with the rest of the SMART Scaffolder products:

**Model IT**

SMART Scaffolder Model IT is a powerful 3D modelling tool. Use it to create scaffolds to exactly meet your project-specific needs. It is recommended that Model IT is used alongside Check IT TG20:13, since you can use it to adjust the scaffold design so it passes TG20.

**Schedule IT**

As a rapid way of creating large, multi-scaffold projects, Schedule IT can be used to rapidly create scaffolding projects which can then be checked for TG20:13 compliance.

**Report IT**

Produce material lists and technical drawings alongside the TG20:13 compliance reports.

**Price IT**

Produce a fast and highly customisable pricing report for your scaffolding project.

**Quote IT**

Generate quotations for the project, to send to the customer.

**BIM Toolbox**

Create scaffolds more quickly, using information from an existing model, or export data from SMART Scaffolder to be used in other design software.

For more information about the other SMART Scaffolder products, please refer to their user guides, which were also supplied with your SMART Scaffolder DVD.
Feedback

Thank you for choosing CADS SMART Scaffolder.

We are always striving to improve the product so please contact us with your feedback. We are always keen to hear new ideas and if you experience any problems with the software we want to hear about them so that they can be resolved.

You can contact us via:

- Our website support centre at [www.smartscaffolder.com/support.html](http://www.smartscaffolder.com/support.html);
- Email on support@cads.co.uk;
- Telephone on +44 (0)1202 603733 from Monday to Friday between 09:30 and 17:00.