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EARTHING & LIGHTNING PROTECTION

StrikeRisk v6.0
IEC/EN 62305-2
Risk management software

StrikeRisk is purpose designed to carry out the complex, laborious calculations of IEC/EN 62305-2, results can be achieved in minutes rather than the hours or days that it would take to do the calculations by hand.

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StrikeRisk v6.0
Introduction

StrikeRisk v6.0 is designed for engineers, architects and contractors who are tasked with carrying out risk calculations in line with IEC/EN 62305-2 Lightning protection - Risk management.

IEC/EN 62305-2 is key to the correct implementation of IEC/EN 62305-3 and IEC/EN 62305-4.

StrikeRisk is purpose designed to carry out the complex, laborious calculations of IEC/EN 62305-2, results can be achieved in minutes rather than the hours or days that it would take to do the calculations by hand.

The following are some of the key features of StrikeRisk v6.0.
- Carry out and view multiple Cases (risk assessments) under the banner of a single project.
- Build new projects from one of a number of pre-defined templates based on variants of IEC/EN 62305-2.
- Split the structure under consideration into multiple Zones in order to pinpoint highrisk areas.
- Consider multiple cables connecting to the structure.

- Consider multiple remotely connected structures.
- Quick and easy colour coded identification of risk factors requiring attention.
- Full detailed reporting/exporting facility.
- Detailed online help.

The next few topics will help you to get started with StrikeRisk. You will be guided through:
- Installing StrikeRisk
- Activating StrikeRisk
- User interface
- Basic steps

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Installing StrikeRisk
System requirements

Before installing StrikeRisk v6.0 make sure your PC meets the following minimum requirements. You need...
Microsoft .NET Framework 4.5 (installed with StrikeRisk) or Microsoft .NET Framework 4.51.

Hardware Requirements (as per Microsoft .NET Framework 4.5)
Processor 1GHz
RAM 512MB
Disk space (minimum)
32-bit 850MB
64-bit 2GB

Supported client operating systems
Windows 8.1 32-bit and 64-bit Include the .NET Framework 4.5.1
Windows 8 32-bit and 64-bit Include the .NET Framework 4.5
Windows 7 SP1 32-bit and 64-bit
Windows Vista SP2 32-bit and 64-bit

For all platforms, we recommend that you upgrade to the latest Windows Service Pack and critical updates available from the Windows Update website to ensure the best compatibility and security.
**Installing StrikeRisk**

(based on Windows 7)
Furse recommends that you uninstall any older versions or evaluation versions of StrikeRisk prior to installing new versions. See page 6.

To install StrikeRisk v6.0, you'll need to run the Setup program contained on the CD-ROM. Perform the following steps to Start the installation of StrikeRisk v6.0.

a. Insert the program CD in the CD-ROM drive of your computer. If your system is set to run programs automatically, the following dialogue box is displayed from which you can start the installation procedure
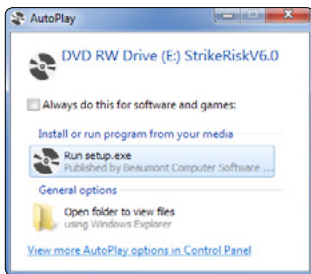
b. If your system does not support the automatic execution of programs, you can access the contents of the CD by selecting **Start**, **Run** and **Browse**. You can then go to the relevant directory, typically **(D:) StrikeRiskv6.0**, where you will find the file **Setup.exe.** Select this file and click **OK**. Setup is then started manually.

c. A license agreement dialogue box will be displayed which should be read carefully. The agreement specifies the legal conditions under which you may install and use the StrikeRisk v6.0 software. If you agree to the terms, click **Accept** to continue with the installation. If you do not agree with the terms of the license agreement then click **Don't Accept** and the installation wizard will exit.

d. A supplemental licence agreement box displays for the Microsoft .NET Framework 4.5 (x86 and x64). If you agree to the terms of the licence agreement, click **Accept**. If you do not agree with the terms of the License agreement then click **Don't Accept** and the installation wizard will exit.
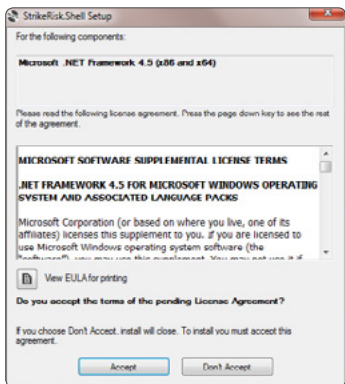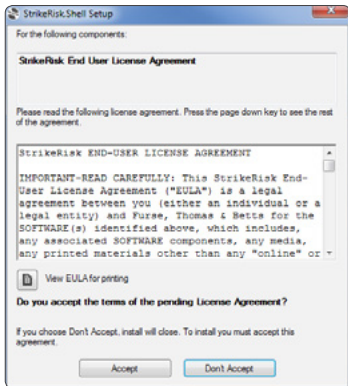
e. A supplemental licence agreement box displays for the Microsoft System CLR Types for SQL Server 2012 (x86 and x64). If you agree to the terms of the licence agreement, click **Accept**. If you do not agree with the terms of the License agreement then click **Don't Accept** and the installation wizard will exit.
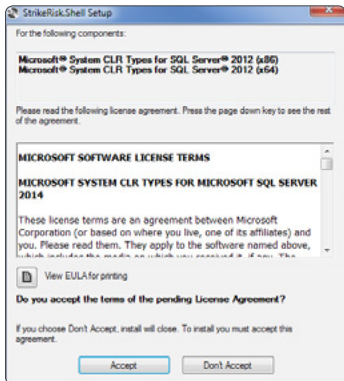
f. A supplemental licence agreement box displays for the Microsoft Report viewer. If you agree to the terms of the licence agreement, click **Accept**. If you do not agree with the terms of the License agreement then click **Don't Accept** and the installation wizard will exit
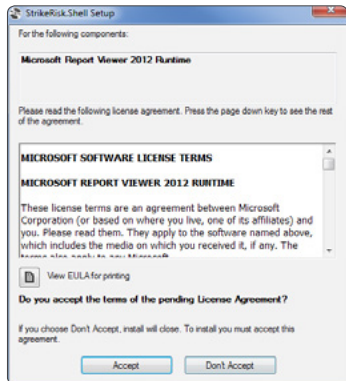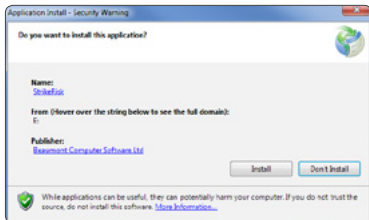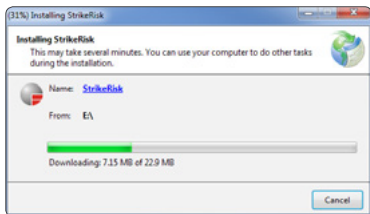
g. The installation is now ready to begin. When the following dialogue is displayed click the **Install** button to start the installation. If you wish you can click the **Don't Install** button to cancel the installation.

h. The installation process begins copying the files. The progress bar indicates the current file transfer status.

i. Once all files have been copied StrikeRisk will start automatically.

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Installation troubleshooting

Occasionally, you may encounter problems while installing StrikeRisk.
Some troubleshooting tips are given below that may resolve the problem. If you have any further questions, contact Furse Technical Support.
• Check to make sure there is enough free disk space on your hard disk to meet the system requirements. (The setup process should notify you if there is not enough free disk space prior to installation.)

• Before installation, shut down any running programs, including virus-checking programs. (Usually, virus-checking software has little or no impact on the installation process; however, if you are running such software and encounter difficulties with your StrikeRisk installation, turning off the virus-checking programs and then re-installing often resolves the problem.)

- Delete any files in your temporary folder. (This folder is determined by the TEMP environment variable. Usually it is located in **C:\Temp or C:\Windows\ Temp.)**
- Run a disk-scanning utility. Hard disk errors can cause problems with the installation process.

(Some Microsoft Windows systems contain a utility named Scandisk.
- If you have questions about disk-scanning utilities, talk to your system administrator.)
- Copy the StrikeRisk setup CD to your Hard disk, then run **setup.exe** from your hard disk.

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Uninstalling StrikeRisk

Furse recommends that you uninstall any older versions or evaluation versions of StrikeRisk prior to installing new versions. Running multiple versions of StrikeRisk applications on the same computer is not recommended or supported by Furse.

Before uninstalling StrikeRisk
Use the following steps to protect existing information you may have on your system.

Save existing StrikeRisk projects
Uninstalling removes program files only – project files you created in StrikeRisk remain on your system. We do recommend, however, that you copy and move any projects you saved in the StrikeRisk folder to another location on your hard disk (such as in your My

Documents folder) before uninstalling StrikeRisk.

To uninstall StrikeRisk (based on Windows 7):

a. From the **Start** menu, select **Settings – Control Panel.**

b. Click on **Uninstall a programs**.

c. From the list of programs that you can remove, select **StrikeRisk v5.0** (or **StrikeRisk** if uninstalling version 4.0).

d. Click **Uninstall**.

e. At the prompt, click **Yes** to confirm that you want to remove the program.

f. The uninstall program removes program files, folders, and registry entries.

g. When the files are removed, the uninstall program indicates that the process is complete. Click **OK**.

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Activating StrikeRisk
Overview

StrikeRisk is activated by a USB Security Key (sometimes known as a hardware lock or a dongle). Product activation ensures that a particular product is not used on more computers than is allowed by the end-user license agreement (EULA). Activation is simple and takes only a moment.

A full licensed copy of StrikeRisk is supplied complete with a dongle. The dongle must be activated to allow StrikeRisk to run beyond its 15 day evaluation period.

The following activation procedures are specific to either:
• Standalone dongles
• Network dongles

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Standalone dongles

Standalone dongles are green in colour.

Standalone dongles are supplied when Furse Part No. SR600 is purchased.

A Standalone dongle is required to allow StrikeRisk to run (once the evaluation period has expired) on a single workstation with StrikeRisk installed. The Standalone dongle must be present and detected in a USB port of your PC to allow StrikeRisk to run on that same PC.

StrikeRisk v6.0 cannot be activated by a StrikeRisk v5.0 dongle.

For details of the activation process see Activating Standalone (green) dongles on page 12.

Dongle   Operator workstation   CD

One standard dongle for each user of StrikeRisk

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Network dongles

Network dongles are blue in colour.

Network dongles are supplied when Furse Part No. SR602, SR610 or SR699 is purchased.

A Network dongle is required to allow **StrikeRisk** to be run (once the evaluation period has expired) by multiple users concurrently on multiple workstations **(with StrikeRisk installed)** up to a fixed number of licenses.

For details of the activation process see Activating Network (blue) dongles on page 12.

Dongle

Network

CD

One Network dongle on a server allowing multiple users of StrikeRisk up to a fixed limit

Operator workstation

Operator workstation

Operator workstation

CD

CD

CD
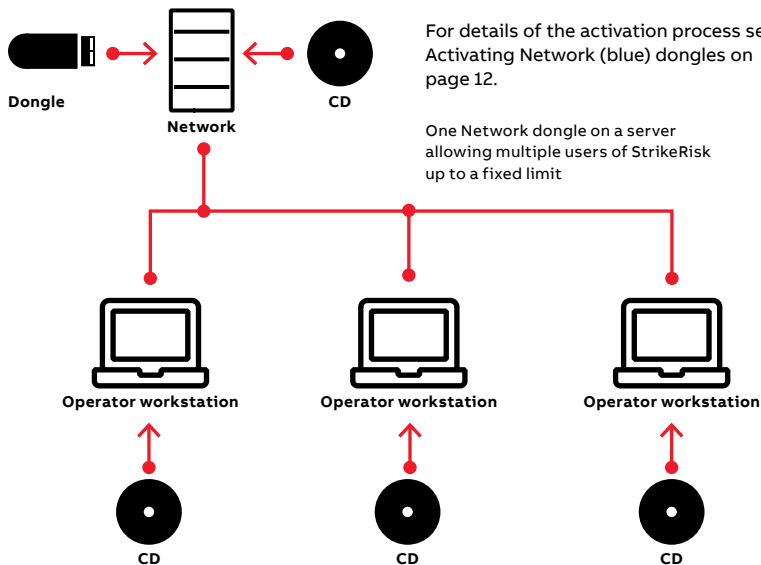
DinkeyServer application (available from installation CD) running on the server constantly monitoring licenses

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Activating Standalone (green) dongles

Place the Standalone (green) dongle (hardware lock) into an empty USB port of your PC. Your operating system should be set up to recognize new hardware automatically.

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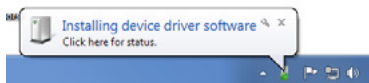
Activating Network (blue) dongles

The Network (blue) dongles can be connected to any machine (not necessarily a server) that is running any version of Windows, Linux or Mac OSX. We refer to this machine as a dongle server.

In order for the Network (blue) dongles to work correctly you need to install DinkeyServer on the computer that the dongle is attached to. On the client machines your protected software will automatically search the network for DinkeyServer which will communicate with the dongle on the server.

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Installing and configuring DinkeyServer

Insert the Network dongle
Place the (blue) Network dongle into an empty USB port of the dongle server. Your operating system should be set up to recognize new hardware automatically. NOTE: This part of the process is identical to that followed for a standalone dongle.

Running DinkeyServer
The DinkeyServer program needs to be running on the dongle server for dongle checking to function.

a. Copy the file **DinkeyServer.exe** from the installation CD i.e. **D:\DinkeyServer.exe** (where D: is your CD drive) to a directory on the dongle server i.e. the machine that the Network Dongle is attached to.

b. Run the file **DinkeyServer.exe** by double clicking the DinkeyServer icon. If Dinkey Server fails to find a Network dongle you will be notified with the following error message.
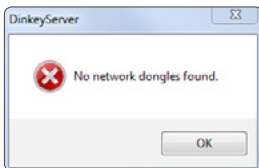
c. If when DinkeyServer is run, it finds one or more Network dongle(s) you will be notified with the following dialogue.
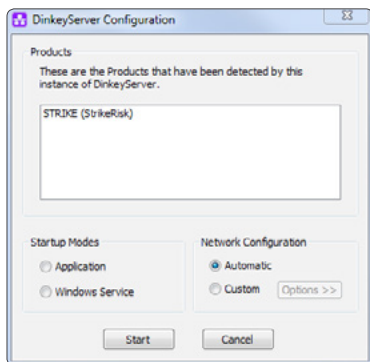
d. Choose to run DinkeyServer as an **Application** or as a **Service** (daemon under Linux) by clicking on the radio buttons under **Startup Modes**.

A Service starts automatically when the machine is booted and does not require a user to be logged in for it to run. Starting DinkeyServer as a Service is the recommended setting for general use.

An Application requires a user to be logged-on for it to run. This may not always be the case on server machines. You may want to start DinkeyServer as an Application if you want to test it.

NOTE: Under Windows if you choose to run DinkeyServer as an Application and want to have it start automatically when the user logs in, then you must create a shortcut to DinkeyServer in that user's 'Startup' folder and specify the appropriate command-line parameters to make DinkeyServer start automatically.

e. The **Network Configuration** section allows you to configure the network settings that DinkeyServer will use.

In **Automatic** mode, DinkeyServer will automatically choose the settings based on the best defaults combined with any existing configuration settings. This is the recommended setting.

Custom mode allows you to manually specify the IP address and port that DinkeyServer will listen on.

f. To start DinkeyServer click the **Start** button. It will then either run as an Application and launch the viewer screen or install itself as a Service and run in the background.

You will need to have Admin Rights to install a Service.

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DinkeyServer viewer

When DinkeyServer is running as an Application, it will display the DinkeyServer Viewer. This utility displays the status of DinkeyServer, the Product Codes it is serving and the network users currently connected to it. A DinkeyServer icon will appear in the Windows System Tray.
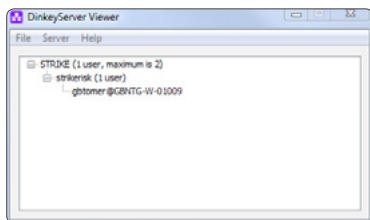

You can also open the server's log file using this utility. The log file records important events during the running of the server and may need to be viewed to diagnose problems.

When DinkeyServer is running as a Service, it will not display the viewer because Services cannot display Graphical User Interfaces (GUIs). However, you can still use the DinkeyServer Viewer by running **DinkeyServer.exe** with the /viewer command-line parameters.

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User interface
Overview
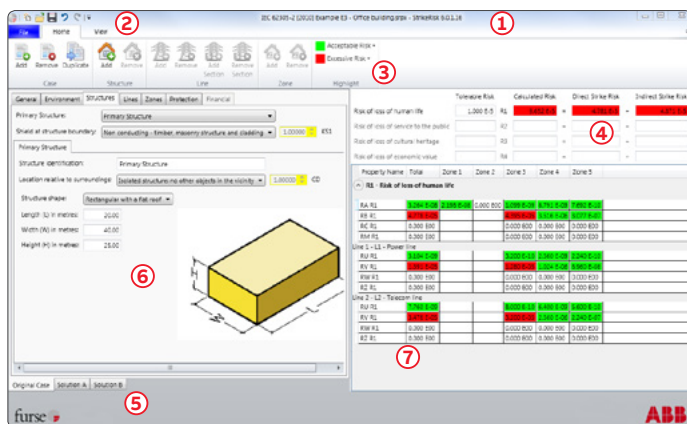
The StrikeRisk user interface consists of the following main parts:

1. Title bar
The Title bar, which is a horizontal area at the top of the StrikeRisk window, provides the filename of the currently Open Project.

2. Quick Access Toolbar
The **Quick Access Toolbar** is a customizable toolbar that contains a set of commands that are independent of the tab that is currently displayed on the **Ribbon**. You can move the **Quick Access Toolbar** from one of the two possible locations, and you can add buttons that represent commands to the **Quick Access Toolbar**.

3. The Ribbon

The Ribbon is designed to help you quickly find the commands that you need to complete a task. Commands are organized in logical groups, which are collected together under tabs. Each tab relates to a type of activity, such as viewing reports. To reduce clutter, some tabs are shown only when needed. The function of a button is displayed when you position the mouse pointer over a button and hold it there for a short time. If a button is grayed out, this means it is not available at present.

4. Summary pane

The Summary pane displays a summary of the key results of the currently selected (open) Case. All four primary risks are shown along with their direct and indirect components. Risk results are colour coded to quickly identify if they are higher or lower than their tolerable value.

5. Case pane

The Case pane is the area in which all currently open Cases are shown and manipulated.

6. Active Case

The Active Case is the currently selected (open) Case and is displayed in front of any other open Cases.

7. Results pane

The Results pane displays detailed results of the currently selected (open) Case. For each of the primary risks selected a separate grid of results is displayed. Each grid displays all of the risk components, per zone and per line that go to make up a primary risk. Risk results are colour coded to quickly identify if they are higher or lower than their tolerable value.

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Customizing the user interface

You can change the program's user interface based on your preferences. The View menu provides options for hiding and displaying toolbars, panes, and other WYSIWYG (What you see is what you get) elements.

Here are some ways of customizing the work environment:
• Adjusting pane size
• Adjusting the visibility of the Ribbon
• Adjusting the location of the Quick Access Toolbar

Adjusting pane size
The program's user interface is divided into three main areas (panes):
• Case pane
• Results pane
• Summary pane

**You can adjust the widths or heights of the above panes to make them smaller or larger by:**

a. Place the pointer over the edge of the divide between the two panes. The pointer turns into a line with arrows on each end ⟷ or ↕.

b. Press the left mouse button and drag left or right, up or down. The pane is resized after you release the mouse button.

The program maintains these settings until you adjust the panes again.

Adjusting the visibility of the Ribbon
By default, the Ribbon is displayed across the top of the window, below the **Quick Access Toolbar** as shown below. There is no way to delete or replace the Ribbon with other toolbars or menus. However, you can minimize the **Ribbon** such that only its tabs are visible to make more space available on your screen.
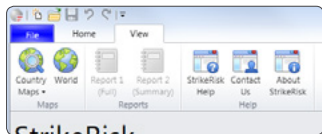
Full Ribbon
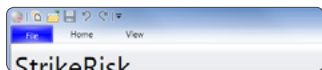
Minimized Ribbon

To adjust the visibility of the Ribbon:
a. Move your mouse cursor to the top right hand corner of the Ribbon to just below the red Close button.

b. Click the button to toggle the visibility of the Ribbon between the two states shown above.

Above the Ribbon

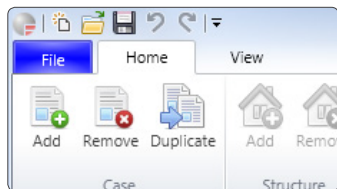**Adjusting the location of the Quick Access Toolbar**
By default, the **Quick Access Toolbar** is displayed in the top left hand corner of the window, above the **Ribbon**. You can adjust the location of the **Quick Access Toolbar** to a position directly below the **Ribbon.**

To adjust the visibility of the Quick Access Toolbar:
a. Move your mouse cursor to the right hand side of the Quick Access Toolbar.

b. Click the button to display the Quick Access Toolbar menu.

c. Toggle the location of the Quick Access Toolbar by selecting Show Below the Ribbon or Show Above the Ribbon.
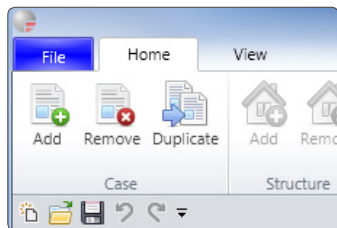
Below the Ribbon
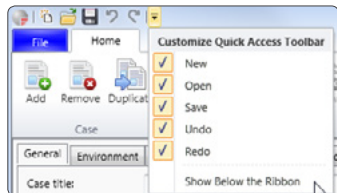
Adjust the visibility

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Basis steps
Your how to guide

Opening the program
After you install the program, a StrikeRisk icon is displayed on your desktop.
How StrikeRisk opens depends whether the program has been activated or if it is running in evaluation mode.

To open StrikeRisk running in evaluation mode:
a. Double-click the StrikeRisk icon on your desktop. The following dialogue box is displayed. At the top of the dialogue a message indicates the number of days remaining before the program must be activated to run.
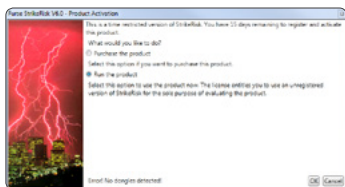
b. Click Run the product (if the 15 day limit has not expired), then click OK.

c. The program splash screen is displayed and the user interface is loaded.

d. Once the 15 day evaluation period has expired the option to Run the product is disabled as shown in the following dialogue box. The program must now be activated by a valid hardware lock before it will run.
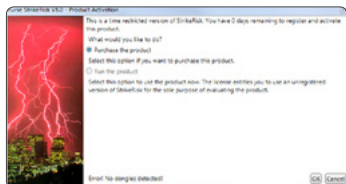
e. Click Purchase the product, if you do not have a valid hardware lock, then click OK. Your web browser will open an take you to the StrikeRisk pages of www.furse.com where you will find details about purchasing StrikeRisk.

To open StrikeRisk activated by a Standalone (green) dongle:
a. Double-click the StrikeRisk icon on your desktop.

b. The program splash screen is displayed and the user interface is loaded.

To open StrikeRisk activated by a Network (blue) dongle:

The first time that StrikeRisk is run:
a. Double-click the StrikeRisk icon on your desktop.

b. Providing that the Network (blue) dongle has been activated (see page 12) and that DinkeyServer is running, the program splash screen is displayed and the user interface is loaded.

If the Network (blue) dongle has not been activated (see page 12) or DinkeyServer is not running, the following Product Activation screen will appear.
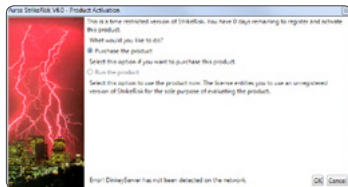
Closing the program

Select the **File** tab of the **Ribbon**, select **Exit**.
NOTE: You may be prompted to update and or save files before the program Exits.

Creating or opening a Project

Use the following procedure to create a new StrikeRisk Project or open an existing Project.

To create a new StrikeRisk Project:
a. From the **File** tab of the Ribbon, select **New**.

b. A number of new Project templates appear in the File window.

c. Click the template button that relates to the relevant standard.

To open an existing StrikeRisk Project:
a. From the **File** tab of the **Ribbon**, select **Open Project**... The **Open Project** dialogue appears.

b. In the **Open Project** dialogue, click the **Look in** dropdown box and browse to the directory where your Project files are stored.

c. Select the required Project file.

d. Click **Open**. The chosen Project opens.

NOTE: To see examples of StrikeRisk Projects open the sample projects that are included in the StrikeRisk installation. The sample projects are located in the Samples subfolder of the location where you installed StrikeRisk.

Developing a Project

The following is a recommended strategy for developing a Project within StrikeRisk. Not all of the tasks are necessary to develop a Project, but you will probably want to complete most of them.

- Create a new Project
- Define the Project properties
- Develop an original Case
  - Define the Environmental influences
  - Define the Primary Structure (the structure under consideration)
  - Define any connected Secondary Structures
  - Define any connected Lines
  - Define any Zones (areas) of the
  - Primary Structure with common characteristics
- Develop one or more solution Cases (if necessary)
- Define any Protection measures

Developing Cases

The heart of each StrikeRisk Project is its Cases. Each Case is a separate risk assessment in its own right.

Each Case is used to carry out a series of calculations using relevant formulae to determine the actual risk R for the Structure under review. The designer must ascertain/decide the type of losses relevant to the structure, enter a number

of dimensions and various weighting factors relative to the Structure, along with various assigned values from the appropriate tables in the Annexes of IEC/EN 62305-2. All of the foregoing can be entered or is accessible within each Case.

The calculated risk **R** is then compared to its corresponding value of R_T.
If the result shows **R <= R_T** then the Structure is adequately protected for a particular type of loss.

	Tolerable Risk		Calculated Risk		Direct Strike Risk		Indirect Strike Risk
Risk of loss of human life	1.000 E-5	R1	5.242 E-6	=	5.153 E-6	+	8.947 E-8
Risk of loss of service to the public		R2		=		+	
Risk of loss of cultural heritage		R3		=		+	
Risk of loss of economic value		R4		=		+	

If the result shows R > RT then the Structure is not adequately protected for the type of loss, therefore protection measures need to be applied. These protection measures are determined from relevant tables given in IEC/EN 62305-2. Again these can be set within each Case.

	Tolerable Risk		Calculated Risk		Direct Strike Risk		Indirect Strike Risk
Risk of loss of human life	1.000 E-5	R1	5.153 E-5	=	5.153 E-5	+	3.281 E-6
Risk of loss of service to the public		R2		=		+	
Risk of loss of cultural heritage		R3		=		+	
Risk of loss of economic value		R4		=		+	

The aim, by a series of trial and error calculations is to ultimately apply sufficient protection measures until the risk **R** is reduced below that of R_T.

Generating reports

The ultimate aim of StrikeRisk is to produce the results of IEC/EN 62305-2 Risk Management calculations in a format that can be passed to a customer or easily incorporated within the documentation of an engineering project.

StrikeRisk allows you to review/generate a number of different forms of output.

A full report can be produced for the currently selected Case. A full report lists all input factors as well as all calculated values and resultant risks.

A summary report can be produced for the whole project. A summary report shows the overall calculated risks and protection system design parameters for each case in the current Project.

In addition to being printed directly, reports can be exported in either Excel, Word or PDF formats.

Reports can be customized to automatically add company logos to the front and following pages.

Getting help

Available via the View tab of the Ribbon, StrikeRisk has an extensive online help system. StrikeRisk Help describes the main interface of the StrikeRisk software package. It shows how to start, navigate and utilize the various parts of the package and describes all of their functions.

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Notes

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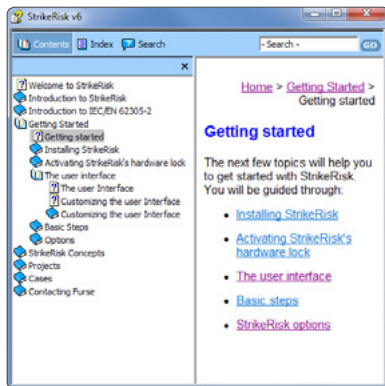
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9AKK101103A5975 Rev A.