

TSI Link™ Report Creator – Noise Exposure Assessment, HPD Analyses



Worksheet Guide (US)

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Overview

The Noise Exposure Assessment workbook contains HPD (Hearing Protection Device) Analysis worksheets for TSI Link™ Report Creator. These worksheets assess the noise in an environment and hearing protection needs. These sheets are customizable and they are able to help you with:

- Spatial Mapping: Plotting readings on an equipment diagram or mapping the sound levels in an area
- Verifying if the current hearing protection passes or fails
- Adjusting Thresholds, Exchange Rates and Correction factors for a Noise Protection Analysis
- Quick and easy calculation of Derated NRR and SNR
- Choosing a Derating Method, i.e. OSHA, NIOSH-Earmuffs, etc.

Check out the [Report Creator Product Page](#) for guides, videos and more resources including: setting up an account, installing the application, using the study manager, using the layout view, customizing report creator templates, etc. This guide builds upon and supplements those guides.

Worksheet Templates

The table below lists the HPD worksheets available in the Noise Exposure Assessment Workbooks. All of these worksheets can be used with 1 to 10 studies:



Worksheet	Supported Measurements	Supported Instruments	Applications
HPD Analysis – HML Method (High, Medium, Low)	Logging Interval (s) Average L _{AS} (dB) Average L _{ASmax} (dB) Average L _{Zpk} (dB) Average L _{Ceq-LAeq} (dB)	OmniTrak™ Solution	Often used in Europe. To use this method, the manufacturer's High, Medium and Low derating levels are needed. This sheet calculates the hearing protection needed for those different frequencies.
HPD Analysis - NRR Method (Noise Reduction Rating)	Assumed Protection Value (dB) Protection Rating Permissible Duration (hrs)		NRR is a U.S.-based rating system, typically showing the effectiveness at a broader range of frequencies and with higher accuracy in specific environments.
HPD Analysis - SNR Method (Single Number Rating)			SNR is a European-based rating system that can be used to calculate the effective protection based on a single number covering a wide frequency range.

NOTES:

The Noise Exposure Assessment Workbook also contains 2 simple worksheets for viewing noise study summaries: *View Study - Custom (any noise configuration)* and the *View Study - Standard Noise Configurations*. Since these sound analyses workbooks have different formats and workflows, they are covered in the **Worksheet Guide – Noise Exposure Assessment, View Studies** document which is in the RESOURCES section of the [Report Creator Product Page](#)

Worksheet Steps

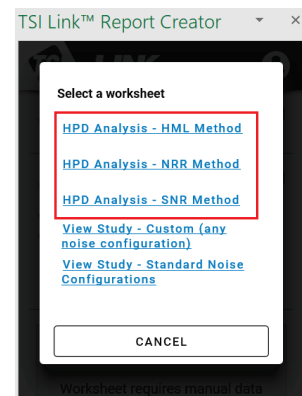
Step: 1

Select the Noise Exposure Assessment Workbook and the desired Worksheet.

The Noise Exposure Assessment Workbook is one of many that are available.

An [overview of the workbooks available is on the Report Creator Product Page](#).

Refer to the overview of the HPD worksheets above if needed.



Step 2: Cover Sheet

This workbook contains a cover sheet that can be customized to suit your needs, such as adding fields or logos, adjusting the font, etc.



Noise Exposure Assessment

Client	Industrial and Commercial Plant ABC
Project	Assessment of Noise Concern
Location	Shoreview MN
Author	Jane Hearnell
Phone	525-123-4567
Email	Jane.Hearnell@IH.com

Step 3: Demographic Information and Study Parameters

This HPD Analysis section starts at row 16. Here are examples for each type of sheet:

HPD Analysis – HML Method

16	HPD Analysis				
17					
18	Manufacturer Rating	High	Medium	Low	Correction (dB)
19	HPD Protection	34.0	30.0	27.0	4.0
20					
21	Comments: Noise Level Assessment for work area, taking into account the different frequency levels.				
22					

HPD Analysis - NRR Method

HPD Analysis			
Method Parameters	Threshold (dBA)	Exchange Rate	Correction (dB)
	90.0	5.0	7.0
			Value
			50%
HPD Protection	Manufacturer NRR	Derating Method	Derated NRR
	28.0 dB	OSHA	10.5 dB
Comments: Tested 4 locations during work hours and 2 during off hours, measuring using NRR method, workers are using xxxx hearing protection devices			

HPD Analysis - SNR Method

HPD Analysis		
HPD Protection	Manufacturer SNR	Correction (dB)
	28.0 dB	4.0
		Derated NRR
		24.0 dB
Comments: Study using SNR method for UK plant ABC at various locations with the Machine Shop		

Step 4: Load Study Data

Enter the location names in the left-hand column of the summary data chart. Then import up to ten studies using the [Study Manager](#) or *File Import*, matching each study with the right location marker. When ready, click **Add Data** to import data into the worksheet.

The measurement data is loaded further down the sheet and the statistical summary table is compiled with the calculated with the key metrics.

Enter Name of Locations / Studies

Summary Data

Location	Duration (hr)	Logging Interval (s)	Average L _{Ceq} (dB)	Average L _{max} (dB)
Location 1 - Work Hours	0.28	1.002	1.002	1.002
Location 2 - Work Hours	0.26	0.955	1.002	1.002
Location 3 - Work Hours	0.25	0.996	1.002	1.002
Location 4 - Work Hours	1.15	1.051	1.002	1.002
Location 2 - Off Hours	0.02	1.048	1.002	1.002
Location 3 - Off Hours	0.09	1.001	1.002	1.002

Data can also be added manually

Mouse over the name to see the full name from Study Manager

Machine Shop - Location 3 - Work Hours (677eeddbb8577823b53d0841)

Machine Shop - Loc... Remove

Location 1 - Work...

Then match the marker location entered with the right study

Machine Shop - Loc... Remove

Select Marker

Location 1 - Work Hours

Location 2 - Work Hours

Location 3 - Work Hours

Step 5: Analyse Data

Protection Rating are automatically generated. Review the summary data. You can add comments for the different study locations.

As Measured		8-Hour Shift at Each Location			Comments specific to locations / studies
	Average LAS (dB)	Assumed Protection Value (dB)	Protection Rating	Permissible Duration (hrs)	
Location 1 - Work Hours	1.0	-9.5	Over-protection	-	Wearing ear plugs, prefers inserts
Location 2 - Work Hours	1.0	-9.5	Over-protection	-	Needs PPE training
Location 3 - Work Hours	1.0	-9.5	Over-protection	-	Control measures needed
Location 4 - Work Hours	1.0	-9.5	Over-protection	-	Noise enclosure damaged
Location 2 - Off Hours	1.0	-9.5	Over-protection	-	HVAC
Location 3 - Off Hours	1.0	-9.5	Over-protection	-	Could reduce protection

Conclusions

Findings: Overall area is over protected, impact of working activity is about 3 to 6 dB, HVAC system makes most of the noise

Recommendations: Consider lower levels of protection if desired, HVAC system is noisy, consider if area is over ventilated

Overall Conclusions and Recommendations

Step 6: Complete the Assessment

To complete the report, you can add recommendations under the Conclusions section.

The print layout for this sheet does not include the measurement data in the blue tables at the bottom of the sheet. They will not appear in a PDF export either.



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