



# BREEAM-NL 2013

## DEMOLITION AND DISASSEMBLY

ASSESSMENT GUIDELINE ON DEMOLITION AND DISASSEMBLY

2013 V\_1.5

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## Changes in Demolition and disassembly

All changes from version to version are published at [www.breeam.nl](http://www.breeam.nl).

The project was started on 17 April 2012. In 2011 the idea arose during a conversation between Freek Oranje and Stefan van Uffelen.

Version	Date of issue	Observations
1.0	14 <sup>th</sup> September 2012	DRAFT
1.1	26 <sup>th</sup> September 2012	DRAFT for use in pilot projects
1.2	8 <sup>th</sup> march 2013	Corrected draft
1.3	24 <sup>th</sup> march 2013	Corrected draft to BRE
1.4	7 <sup>th</sup> april 2013	2 <sup>nd</sup> Corrected draft to BRE
1.5	4 <sup>th</sup> May 2013	3 <sup>rd</sup> Corrected draft to BRE
	Tbd	BRE Global agreement with launching
	Tbd	Agreement Central Advisory Group

This version has not yet been formally approved by the Central Advisory Group of the DGBC and by BRE Global.

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## About DGBC and BREEAM

### Foundation Dutch Green Building Council

The Dutch Green Building Council (DGBC) is an independent non-profit foundation, that, in close co-operation with many market players and (semi-) government bodies develops, manages and maintains, Assessment guidelines against which the sustainability performances of the built-up environment in the Netherlands can be reviewed.

The review is voluntary and the review result comes about in an independent way. After review DGBC issues certificates to clients who have had the measure of sustainability of their building, demolition work, infrastructure project or area assessed according to the preset criteria.

In the present Assessment Guideline you will find all the information about BREEAM-NL Demolition and disassembly, the verification mark for Sustainable Demolition. You can make documented suggestions and additions on the consultation pages on the DGBC Wikipedia [www.wiki.dgbc.nl](http://www.wiki.dgbc.nl).

The DGBC is supported by a large number of organisations which all have a sustainability ambition and subscribe to the aims of the DGBC. These participants are involved actively in development and continuous improvement. On [www.dgbc.nl](http://www.dgbc.nl) there is more information about the participation scheme.

More information on the Dutch Green Building Council can be found on the website [www.dgbc.nl](http://www.dgbc.nl).

### BREEAM

BREEAM is a methodology for the assessment of the sustainability performance of buildings and areas. BREEAM has been developed by the Centre for Sustainable Construction, a component of the English BRE Global. BREEAM stands for Building Research Establishment Environmental Assessment Method.

BREEAM-NL is the version of BREEAM adapted to the Dutch situation. BREEAM-NL is the verification mark under which schemes fall for the assessment of the built-up environment in The Netherlands. DGBC develops and manages the schemes and so is scheme manager. DGBC operates under licence of BRE Global Ltd (England). The use and the operation of the schemes is overseen by an independent review body called Central Advice Group (comparable with a Central Board of Experts), in which a wide cross section of stakeholders from the construction industry is represented.

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## Colophon Demolition and disassembly scheme

In the realization of this verification mark for Sustainable Demolition, a large number of persons have been involved. First of all there is the Demolition Steering Group.

All persons and organizations that have contributed to the development of this verification mark have done so on a voluntary basis.

### Steering group

Name	Organisation	Function in project
Hans Gortworst	Former director of Geoplan BV	Chairman Arboplan BV
Frans van Doorn	Training- & adviesburo Van Doorn (VDTA)	Project manager
Cor Luijten	Rotterdam City Council	
Otto Friebel	Van Gansewinkel	
Edward Struijk / Gooike van Slooten	Struijk Group	
Dinro Hobbel / Hans Oranje	Oranje	
Marcel de Graaf	Lekkerkerker	
Wim Ledder	FMN	
Joris Huijser	BV AanBouw Rijnmond	
Henk Schuur	BFBN	
Arjan Hol	Vereniging voor Aannemers in de Sloop (VERAS)	
Wim Beelen / Kees van Es	Beelen	
Jan Hage	Van Leeuwen Katwijk	
Jan-Pieter den Hollander	Bouwen met Staal	
Peter Minnema	Dura Vermeer / Advin	
Michel Baars	Search	
Stefan van Uffelen	Dutch Green Building Council	Secretary

In addition to the Steering Group the working group is active.

### Working group

Name	Organization
Frans van Doorn	VDTA
Stefan van Uffelen	DGBC
Maarten Schutte	Beelen
Maikel Walraven	Advin
Sjors van Gorp	Van Liempd
Jan Hage / Rico van Noord	Van Leeuwen Katwijk
Willem Kind	Rotterdam City Council
Jan Pieter den Hollander	Bouwen met Staal
John van Herk	VERAS
Joris Huijser	BV AanBouw Rijnmond

You can also (continue to) provide input via [www.wiki.dgbc.nl](http://www.wiki.dgbc.nl) because this assessment guideline largely involves an 'open source' approach, using knowledge and expertise from the market.

### Pilot projects

Thanks to the clients, developers and contractors who have invested in the pilot projects.

Client	Project	Contractor
Gemeente Rotterdam	Marthalaan Hoogvliet (Rt)	G. de Jong & Zonen B.V.
Delta Projectontwikkeling Leiden	Vondellaan Leiden	Beelen Group

## General information

Version 1.0 of BREEAM-NL Demolition and disassembly, the verification mark managed by DGBC for sustainable Demolition, was developed in consultation with stakeholder groups between April 2012 and April 2013.

The user of this Assessment Guideline is deemed to be informed of the content of the BREEAM-NL Manual, in which the procedure, responsibilities and powers of the different involved roles, the form of submission of assessment reports, version numbering, registration etc. are set out in detail. This manual takes precedence, in the event of discrepancies in procedures, that which has been stated in this Assessment guideline. The manual can be consulted and downloaded on the DGBC website.

### **Intellectual property**

This Assessment Guideline, the Manual and related material that is published on the DGBC websites and is made available for downloads, may be freely used but remains the intellectual property of DGBC and BRE Global. This material may not be used in a misleading context or for commercial purposes. If the material is made available to others, there is a requirement to state the source.

### **Publication**

The label under development is published on the relevant DGBC Wiki pages ([www.wiki.dgbc.nl](http://www.wiki.dgbc.nl)). At establishment of an update a PDF file will be formatted and this will be published and released on the website of the DGBC for downloads. Exclusively the PDF versions on the DGBC websites are definitively documented versions. The Wiki versions are always under development and thus draft versions. On the basis of Wiki versions thus it will not be permitted to make a formal judgment on the sustainability of an area.

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## Introduction Demolition and disassembly

This chapter explains what the aim is of BREEAM-NL Demolition and disassembly, the intended users, why it has been developed and how it has been developed. In the following chapter the content starts and the operation of the system is stated in technical terms.

The Dutch Green Building Council ([www.dgbc.nl](http://www.dgbc.nl)) has arisen from the need to make sustainable building and sustainable area development robust and measurable. The mission of the DGBC is to make the build environment more sustainable. In line with that objective, the DGBC has taken the initiative to develop and manage a verification mark for Sustainable Demolition and disassembly. This Assessment Guideline is the main end product of that development process. Together with the BREEAM-NL Manual and the associated procedures they form the Demolition Verification Mark. For a complete assessment the total Verification Mark applies.

The DGBC currently develops, manages and maintains four schemes under the verification mark BREEAM-NL: BREEAM-NL New Build for New Build and large-scale renovations, BREEAM-NL In-Use for existing buildings, BREEAM-NL Area Development and now BREEAM-NL Demolition and Disassembly.

### Purpose of this verification mark

The underlying, "higher" purpose of this and the other DGBC verification marks is making the build environment more sustainable. In this instance the purpose is to provide a common approach for sustainability in demolition and disassembly activities. The client, contractor and end users obtain insight into the sustainability performances of the demolition of a project. The qualification, ranging from 1 to 5 stars, provides the project with a compact, clear method of communication.

Municipalities and provinces, but also private developers can distinguish themselves by making a robust contribution to the cyclic economy by demolishing and disassembling sustainably. The population in The Netherlands does not grow rapid anymore and buildings are used more efficient. Therefore new building developments are more and more replacement projects. The sustainable demolition phase will become an integral part of the building process.

### Target groups & Stakeholders

Primary target groups for this verification mark are Municipalities, Provinces, Central Government, developers, investors and users. You can demonstrate with this certificate that you take responsibility for what you leave behind.

### Label as instrument

The verification mark for Sustainable Demolition has been developed as a response to questions from the market. Local authorities, developers, end users and contractors have a requirement for an unambiguous definition that is reviewed independently.

The label itself is also an instrument in the preservation of the built-up environment because it generates momentum and stimulates a certain measure of competition and benchmarking: 'who is the most sustainable?' Also successful collaborations will contribute.

- Why a good deal of research is required, every time from the line of thought "think before you start".

### Organisation of development and management of "Schemes"

The DGBC directs the development and the management of Schemes, including the Demolition and Disassembly Scheme. The project office reports to the DGBC management. An independent review body, the Board of Experts, reviews the developments, oversees the operation of Schemes and establishes definitive versions

As with every scheme, the development of the Demolition scheme is overseen by a Steering Group. The Demolition Steering Group has a varying composition. Members can put themselves forward or are proposed by the existing members. The composition is established by the management.

An ad-hoc composition of working groups falls under the responsibility of the Demolition Steering Group. These working groups produce the detailed criteria that address the issues identified by the Steering group.

From the point of view of independence of the DGBC, the management and the Board of Experts are composed using the principle of 'all parties concerned'. So there are no parties or sectors that can exert excessive influence on the content. This also applies, but to a lesser extent, for the Steering Group. There, the 'all disciplines concerned' principle plays a larger role. It is ultimately a specialist group. For the working groups the 'all disciplines' principle is precisely decisive (the right expertise must be represented) where the Steering Group must watch for excessive representation of particular interests.

Role and task distributions of the project office, the Board of Experts and the management have been documented in articles and domestic regulations. Functioning and the independence are regularly reviewed under an accreditation regime

## Independence of review

An essential component in the positioning of the DGBC verification marks is the independence of the whole process of review of a demolition project against the standard.

For the review, assessors are trained with thorough knowledge of the content of the label, the underlying processes and procedures, and with skills in the field of the performance of external audits. The assessors should be wholly independent from the demolition project to be assessed. The assessor reviews the report that has been set up by the client according to previously specified criteria. On the basis of the report and the supplied evidence the assessor comes to a provisional final assessment of 1 to 5 star. Then the DGBC checks by random samples the recommendation of the assessor. If the DGBC is in agreement with the recommendation the certificate is issued.

## Reservations

With regard to this label a number of reservations must be made to avoid unrealistic expectations.

1. Following the proposed measures, suggestions and indications from this verification mark do not lead to "the ideal demolition project". Firstly nobody knows how that looks, and secondly the development and arrangement of an area in the ideal situation is an optimal as possible balancing act between sometimes conflicting requirements. The subjects treated in the label reflect these considerations and absolutely no area will therefore achieve 100% of the scores.
2. Not all subjects that determine the sustainability performance of an area are dealt with in this label. It would be too extensive and so unworkable. The subjects that are discussed have been established by the contributions of some 40 experts with practical experience, supplemented with literature and so is an expression of consensus. In the first 1 - 2 years of the existence of this verification mark subjects may still be added or dropped, depending on the practical experiences. It is expected that it will then stabilise and only still change sporadically.

## Much research in advance

As proof for the sustainability performance of a demolition project, a lot of research is required e.g. inventories, investigations and analyses. From a sustainability perspective, it's of great importance that "everything" is known in advance and is examined and considered in cohesion. Many subjects ("credits") start with a "mandatory" investigation or an analysis. Not mandatory in the sense that a certificate is withheld without the investigation, but in the sense that the investigation is linked to the points in the same credit to be awarded afterwards. In practice, often much of this investigation is already necessary or desired in all cases. For a high score there is extra attention to insight and analysis is necessary in advance.

## I want to certify - and now?

If you represent the client (a consortium, a public-private co-operation, a municipality or province) that wants the sustainability performance of a demolition project to be established. In broad lines this is then the sequence which should be followed (more details are available from DGBC):

1. Get in touch with DGBC. This is to establish whether your demolition project would fall under the Sustainable Demolition Scheme.
2. Register the demolition project by means of a free report tool (the DGBC assessment tool)
3. Ensure the preparation of a completed assessment of the demolition project based on the requirements in this Assessment Guideline.
4. Appoint a Demolition Assessor. This is a person who has been trained by DGBC to assess an assessment report and to assign a provisional qualification. DGBC specifies requirements for the independence of the assessor relative to the project.
5. DGBC carries out a quality check on the provisional qualification of the assessor. If approved, a certificate follows with the relevant qualification. "The Demolition Project" / the client may then communicate externally about this such as "Demolition project x has obtained a BREEAM-NL demolition and disassembly qualification of 2 stars according to the Assessment Guideline from 2012".

## A good preparation of an assessment

A good preparation of an assessment is of great importance for the progress of the whole process: the time allocation, the costs and the outcomes. Note that the sequence of handling credits is in no way compulsory. It is only the most obvious sequence and so can save time and effort.

It is also of great importance to first review which compulsory credits should be obtained, credits can then be treated in an arbitrary sequence. In practice all credits will be part of the process.



## Scope – Range Demolition and disassembly

This chapter provides a more detailed examination of the scope and the range of the Assessment Guideline.

This scheme covers the planning and the execution of the demolition and disassembly project. The decision making process whether to demolish or to renovate, etc, is not part of the scope. There is however Man92 where we ask evidence that alternative options for demolition have been considered, but the basic starting point for the scheme is: the decision for demolishing has been made.

### Phasing

The demolition and disassembly process exist of two certification phases:

#### Planning phase

In the planning phase the plans and the visions and ambitions presented in that are set up. Also the preparation on a plan, in the form of various analyses, is part of this assessment. In the planning phase the basis is laid for the implementation and the management. Evidence in this phase usually consists of intentions and declarations, anticipating the implementation.

#### Execution phase

This phase involves the sustainable management of the demolition project through registration and monitoring of the sustainability performances. Collected data can be used for improvements.

### What are BREEAM and BREEAM-NL

BREEAM (Building Research Establishment's Assessment Method) is the leading and worldwide most commonly used method for the measurement of the environmental performances of buildings. It sets the standard for best practice in sustainable design and has become the de-facto benchmark to describe the environmental performance of a building. BREEAM-NL is the version of BREEAM translated to Dutch and to the Dutch situation.

#### Purposes of BREEAM

- The implementation of sustainable projects in the built-up environment (buildings, areas, infrastructure) with minimum impact in the environment
- Making it possible to distinguish these projects according to their sustainability
- The arrangement of a credible verification mark for these projects
- Stimulating the demand for sustainable projects in the built-up environment

#### Objectives of BREEAM

- Provision for market recognition of projects in the built-up environment with low environmental impact
- Ensure that best practices are incorporated in projects
- Setting standards and setting criteria that rise above the legal requirements, and challenge the market to supply innovative solutions that minimize the environmental impact of projects
- Increasing the awareness of owners, users, developers and managers with regard to the benefits of buildings with a limited environmental impact

### BREEAM Reliability

Technical reliability The BREEAM-NL methodology is based on the BREEAM standard extensively tested and applied in England. In England more than 115,000 buildings are already certified with BREEAM and more than 700,000 houses and utility buildings are registered to be assessed with BREEAM.

BREEAM is based on objective criteria that value good sustainable performances:

- There is consensus on the importance of subjects to be assessed, and their significant contribution to sustainability subjects must be assessable in the relevant stages of the life cycle of the building
- Performances are based on scientific proof, where possible sustainability performances must exceed the legal requirements and promote innovation improvements that are stimulated by BREEAM-NL must be accessible and cost-effective

Where specific aims cannot be described on the basis of scientific data, logical and practical measures are recommended that increase the sustainability performances of the project and the users.

Commercial reliability Assessments are carried out by organizations and persons that have been trained for that by DGBC under license of BRE Global. This ensures:

- Market action Involvement from the whole sector
- Assessors work according to the same quality standard
- Certification is carried out by DGBC under licence of BRE Global.

## Summary of subjects in the BREEAM-NL Assessment Guideline

The assessment of a demolition project takes place using a credit list. Version 1.0 and following major revisions of the credit list are established by the Central Advisory Group of DGBC and by BRE Global, and can be consulted on [www.breeam.nl](http://www.breeam.nl)

Demolition projects are assessed in the plan and execution phases on the basis of subjects, grouped in the following categories:

1. Management
2. Health
3. Materials
4. Energy
5. Transport
6. Water
7. Pollution
8. Land use & Ecology

Details of each category and each subject (called 'credit') are presented in this Assessment Guideline. Sustainability objectives have been defined for each credit and criteria with which compliance is mandatory. If the criteria are met points can be awarded.

The sustainability objectives rise above the legal minimum insofar as documented in legislation and regulations. BREEAM-NL certification is therefore a voluntary choice of the client. The objectives are based on current practical directives. (Best practices).

Most credits have freedom of choice, which means that clients can choose for which credits they want to obtain the points and in this way build up a total score. For a number of subjects, there applies a minimum standard that must be achieved to obtain a final overall score. These are compulsory credits.

The assessments of demolition projects result in a definitive report and a BREEAM-NL certificate, in which the sustainability performances of the assessed demolition project are stated against the subjects from the standards framework.

## Subject of assessment

This Assessment Guideline (BRL) is intended for the assessment of demolition and disassembly projects in The Netherlands. On a positive result of the assessment a DGBC certificate is issued stating the qualification applicable to the demolition and disassembly project.

At registration of the demolition project for assessment it is established according to which version the project should be assessed. The operative version on the basis of which the assessment has taken place is shown on the certificate. Certificates to be issued for delivered demolition projects form a snapshot and have a limited validity.

## Integral assessment

Each certification always comprises the whole demolition project, regardless of the development phases in which the demolition and disassembly project is situated. For the part that is in the planning phase the evidence should be submitted that has been specified for the planning phase. For the parts that are in the execution phase the evidence should be submitted that has been specified for that phase. Finally an integral assessment comes about for the whole demolition project, proportionally to the distribution according to phases.

As the development goes on, a shift is carried out from submission of evidence for the planning phase, to evidence for the execution phase. For each assessment there is always one total score for the whole demolition project.

## Score and Qualification Demolition and disassembly

This chapter explains how a qualification is worked out for a demolition project assessed against this Assessment guideline. A number of elements determine the final qualification:

- Threshold values per qualification;
- Weighing;
- Minimum standards (compulsory credits); Innovation credits.

### Threshold values per qualification

The obtained final score is converted according to the following table into a BREEAM-NL qualification:

Qualification in Stars	Score	
1 star	>= 30%	Pass
2 stars	>= 45%	Good
3 stars	>= 55%	Very Good
4 stars	>= 70%	Excellent
5 stars	>= 85%	Outstanding*

\* For the qualification 5 Stars additional requirements are obligatory, this is explained further on.

The final obtained score is stated on the certificate.

Example of calculation of the Demolition and disassembly qualification:

Category	Scored points	Available points	% Achieved points	Weighting	Category score
Management	9	17	53%	13%	7%
Health	5	6	67%	5%	3%
Materials	15	20	75%	40%	30%
Energy	1	4	25%	5%	1%
Transport	14	28	50%	20%	10%
Water	0	1	0%	5%	0%
Pollution	5	16	31%	7%	2%
Land use and ecology	1	4	25%	5%	1%
<b>Total score</b>					55%
<b>Temporary qualification</b>					2 Stars
<b>Required points for qualification</b>	<b>2 Stars</b>				<b>Achieved</b>
MAN 91 Quality assurance	1				5
MAN 92 Accountability demolition	0				1
MAN 93 Social return	0				3
HEA 91 Safety	0				3
HEA 92 Air quality	0				1
MAT 91 Materials	5				15
ENE 91 Energy efficient equipment	0				0
ENE 92 Carbon footprint	0				1
TRA 91 Staff transport	0				2
TRA 92 Transport of means and materials	0				10
TRA 93 Prevent traffic nuisance	0				2
WAT 91 Water use	0				0
POL 91 Noise pollution	0				1
POL 92 Dust reduction	0				1
POL 93 Vibration	1				2
POL 94 Water pollution	0				1
LE 91 Flora and fauna on site	0				1
LE 92 Closed soil balance	0				0
Innovation credits					0%
<b>Final score</b>					55%
<b>Final qualification if all required items have been achieved</b>					2 Stars

In the above example the temporary qualification '3 Stars' is equal to the definitive qualification because the compulsory credits for this level have been achieved and the innovation credit has not led to a step to the following level.

## Weighing

The final total score is determined by the sum total of the obtained scores per category, multiplied by a weighing percentage per category.

The weighing percentages have been provisionally established for this version by an even distribution between the eight substantive categories.

Management	13%
Health	5%
Materials	40%
Energy	5%
Transport	20%
Water	5%
Pollution	7%
Land use & Ecology	5%

## Credit filtering

The list of credits on which the demolition project is assessed depends on the demolition environment such as noise.

The following credits are not included in the calculation:

POL 91 Noise pollution If there are no buildings in a surrounding of more than 400 meters.

## Compulsory credits

To be able to obtain a demolition qualification a minimum standard must be met. This means that per level for a number of credits a minimum number of points must be achieved. This has been shown in the following table.

Credit Demolition and disassembly	1 Star	2 Stars	3 Stars	4 Stars	5 Stars	Max
MAN 91 Quality assurance	0	1	4	4	6	10
MAN 92 Accountability demolition	0	0	0	1	1	2
MAN 93 Social return	0	0	1	3	3	5
HEA 91 Safety	0	0	1	2	2	2
HEA 92 Air quality	0	0	1	2	3	4
MAT 91 Materials	3	5	7	10	15	20
ENE 91 Energy efficient equipment	0	0	0	0	0	3
ENE 92 Carbon footprint	0	0	0	0	0	1
TRA 91 Staff transport	0	0	1	2	3	4
TRA 92 Transport of means and materials	0	0	10	15	15	20
TRA 93 Prevent traffic nuisance	0	0	1	2	3	4
WAT 91 Water use	0	0	0	0	0	1
POL 91 Noise pollution	0	0	0	3	3	5
POL 92 Dust reduction	0	0	1	3	3	4
POL 93 Vibration	0	1	2	3	4	5
POL 94 Water pollution	0	0	0	0	0	2
LE 91 Flora and fauna on site	0	0	1	1	2	2
LE 92 Closed soil balance	0	0	0	0	0	2

## Innovation credits

A maximum of 10% can be added to the final score for innovation credits. In theory, it is therefore possible to score 110%. One per cent is added to the total score per honored innovation.

Each innovation can be honored only 1 time. Thus a second project that submits the same innovation (or assessed by the jury as "the same") does not obtain an extra per cent.

An Innovation is defined as an aspect that is not yet widely applied in the current development practice and delivers an increase of the sustainability of the project, in addition to the standard credit list, and has been assessed as an innovation by a jury.

**PLEASE NOTE:** it is recommended always to make contact with the DGBC in advance if the intention is to submit an innovation credit. For this purpose see also: Breeam.nl.

## How does a Demolition Qualification come about

To achieve the qualification the following has to be done (see also following table) :

1. Establishment of the number of obtained points for a credit in Planning and execution phase.
2. Multiply the number Obtained points for the credit by the relevant phase percentage. For example: Health 3 points; Suppose that for the Materials 4 points are achieved.
3. Establish the number of obtained points per category by summing the credit points;
4. Establish the percentage per category on the basis of the maximum number of points to be obtained in each category for example 15 points of 30 = 50%;
5. Multiply the category percentages with the weighting factors; this provides the category score
6. Add up the category scores, including the innovation credits where applicable; this delivers a draft final score.
7. Check whether the compulsory credits for the provisional qualification have been achieved. If yes, then the draft qualification is equal to the definitive qualification.

## 5 Stars Qualification

To be able to obtain a 5 Stars qualification for an area the following requirements must be met:

1. Definitive score must be  $\geq 85\%$ ;
2. Compulsory credits must be obtained;
3. A case study must be delivered according to the directives.

Case study One of the most important aspects of a 5 Stars qualification will be the example function of these projects for the rest of the industry. It is therefore of great importance that other developers and clients can have a good case study.

The client of the demolition that has reached the 5 Stars qualification will be asked by DGBC either to deliver a ready-made case study, or to deliver so much material that DGBC can produce this themselves. This information will be requested together with the definitive report of the assessor for the relevant phase.

After approval of the client DGBC will use the case study for various publications.

If no case study or unsatisfactory material is delivered, then the project will receive the qualification 4 stars.

## Definition Sustainable demolition and disassembly

### Definition Sustainable Demolition and Disassembly

A demolition and disassembly project is fully reviewed and is defined as follows:

The whole (total demolition) or partial demolition (strip out) or disassembly (for recycling) of buildings, objects, constructional works and plants where the main objectives are:

- Guarantee safety, environment and quality are assured, there is accountability for demolition and provide long-term unemployed people an opportunity to work and training;
- Ensure safety and health on the project location and guarantee the air quality during the project;
- Materials to be reused according to the "Ladder van Lansink";
- Energy saving by use of energy sufficient equipment and have awareness of the total energy consumption;
- Reduce CO<sub>2</sub> and NO<sub>x</sub> for the complete transport (Staff, materials and equipment) during the project and minimize traffic nuisance;
- Save water consumption by setting objectives and monitoring;
- Avoid pollution from noise, dust, vibration and polluted water;
- Take measures to protect the flora and fauna on and nearby the project and limit the environmental impact of soil removal.

### Reading directions for the categories and credits

In order ensure that all credit requirements are fully understood, it is important to read through the whole credit in its entirety and not just the credit aim.

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# Management

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# MAN 91 Performance assurance

## Purpose of the credit

Guaranteeing that safety, environment and quality have been assured in the operational management.

## Credit criteria

There can be assigned up to 10 points as follows:

The first point (Basis) is an obligation to obtain the credit.

Ref.	Points	Basic
1.0	1	ISO 9001 certificate is in the possession of the main contractor (or equivalent)
		VCA certificate is in the possession of the main contractor
		SVMS 007 certificate is in the possession of the main contractor

The extra points from the following list can be assigned if the first credit has been achieved.

Ref.	Points	Extra points
2.0	2	ISO 14001 certificate is in the possession of the main contractor (or equivalent)
3.0	2	OSHAS 18001 certificate is in the possession of the main contractor (or equivalent)
4.0	1	SC 530 certificate is in the possession of the main contractor (or nationally required equivalent)
5.0	1	SIKB 7000 certificate is in the possession of the main contractor (or nationally required equivalent)
6.0	3	CSR performance ladder level 3 or higher (or equivalent)

## Criteria requirements

- 1.0 The first point is the basis, 3 certificates or their equivalent must be held.  
 1.1 In case of subcontracting, the subcontractor must be in the possession of the VCA certificate, according to the requirements of the client.

1.0-6.0 At least for the duration of the project all certificates must be valid or are in the process of extending.

2.0-6.0 The extra points can be achieved in an arbitrary sequence.

## Additions to the criteria requirements

## Required evidence

### Planning phase

1.0-6.0 The valid certificates or their equivalent.

### Execution phase

1.0-6.0 The certificates that were valid for the duration of the project.

## Definitions

### Corporate Social Responsibility (CSR) performance ladder

- The ladder is an instrument in the tendering process. With this awarding organisations recognise and reward companies that take CSR seriously. Companies can show how ambitiously they work on it.



#### Main Contractor

- The main contractor is the party that is ultimately responsible for the execution of the demolition project.

#### Subcontractor

- Subcontracting is a contract whereby one party, the subcontractor, agrees with the other party, the contractor (client) to engage without employment, a work of material nature to create and deliver, against a by the main contractor (principal) payable monetary amount.

### Additional information

#### ISO 9001

International standard for Quality Management systems.

#### VCA certificate

The VCA certificate is a typical Dutch certificate, issued by SSVV (Stichting Samenwerken voor Veiligheid) and solely based on Dutch regulations. For the VCA certificate there is no substitute cause this certificate is mandatory for all companies who work, either they are Dutch or not.

#### SVMS007

Dutch norm for Safe and Environmental demolition and at this moment the product norm for demolition companies. There are no international equivalents.

#### ISO 14001

International standard for Environmental management systems.

#### OSHAS 18001

International Occupational Health & safety (OH&S;) Management system to help an organization to formulate a policy and objectives, taking into account legislative requirements and the information regarding major hazards and risks in the organization.

#### SC530

Dutch certificate that is a legal obligation for the remediation of asbestos in The Netherlands. No other certificates are allowed. Each of EU members have their own legal obligations for remediation of asbestos.

#### SIKB7000

Dutch certificate that is a legal obligation for the remediation of polluted soil in The Netherlands. No other certificates are allowed.

#### CSR performance ladder

The CSR Performance Ladder – International Management System Requirements and Certification Standard for CSR (ISO 26000)

### References

[www.wiki.dgbc.nl](http://www.wiki.dgbc.nl)

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# MAN 92 Accountability demolition

## Purpose of the credit

Avoid unnecessarily demolition and disassembly.

## Credit criteria

There can be assigned up to 2 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the client's decision to demolish environmentally can be justified.
2.0	1	Where the provided evidence demonstrates that the client can produce the energy label of the building to be demolished.

## Criteria requirements

First point:

- 1.0 There is a report of the client, signed by the client, which discards accountability on the realization of the project that includes the following items:
  - Environmental consequences for both the save and the demolition of the building / object;
  - Substantiation of both advantages and disadvantages of this decision;
- 1.1 A report of the client making clear that:
  - the building has a low energy label (D, E, F or G),
  - or, if no label is available, providing the age of the building and a picture of single layer glass makes clear that the energy performance of the building will be worse than a D label;
- 1.2 A declaration of the municipality that the building has no significant historical value and the potency to become a monument;
- 1.3 A survey about the perceived quality and beauty of the building among at least 10 stakeholders (people that live or work within 500m of the building). The building has to score less than 6 on a scale of 10.

Second point:

- 2.0 A copy of the energy label of the building.

## Additions to the criteria requirements

## Required evidence

### Both planning and execution phase

- 1.0 Report of the client (signed);
- 1.1 Document with the age of the building with required pictures, or the energy certificate;
- 1.2 Letter from the municipality making clear that the building has no significant historical or monumental value;
- 1.3 The responses to the survey signed by the repondents that they work or life within 500m of the building;
- 2.0 Copy of the energy label.

## Definitions

## Additional information

## References

# MAN 93 Social Return

## Purpose of the credit

Deliver a concrete contribution to social return by creating employment for long-term job seekers, persons in sheltered employment and pupils.

## Credit criteria

There can be assigned up to 5 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that in this project, the main contractor spent at least 10 % of the total operational hours on SR.
2.0	2	Ditto at 10% to 20%.
3.0	3	Ditto at 20% to 30%.
4.0	4	Ditto at 30% to 40%.
5.0	5	Ditto at more than 50%

When less than 10% of the total man hours are spent on SR, no points are assigned.

## Criteria requirements

1.0-5.0 The following demonstrates that there is compliance:

- The ability to show contracts of employment signed by main contractor and employee[s];
- The ability to show invoices that relate to manpower hire costs, supervision costs and/or training costs;
- The ability to show internship agreements or training employment contracts signed by contractor and intern[s]/pupils;
- The ability to show a report providing evidence of the nature of the supervision activities;
- The above data must show that the relevant employee has been deployed fully on this project.

## Additions to the criteria requirements

## Required evidence

### Planning phase

- 1.0-5.0 Report of the estimated man-hours to be spent on SR on this project, including temporary personal and subcontracting;
- 1.0-5.0 Contracts of employment, signed by contractor and employee.
- 1.0-5.0 Internship agreements, signed by contractor and interns, showing the duration of the internship and the level of the internship remuneration.
- 1.0-5.0 Written reports showing the nature and the frequency of the supervision activities.

### Execution phase

- 1.0-5.0 Justification of operational hours of the project; (accountability of hours on the project)
- 1.0-5.0 Contracts of employment, signed by contractor and employee.
- 1.0-5.0 Internship agreements, signed by contractor and interns, showing the duration of the internship and the level of the internship remuneration.
- 1.0-5.0 Completed timesheet and pay strips per month or per period.
- 1.0-5.0 Diplomas and/or certificates of employees, including associated invoices of the relevant training institute.
- 1.0-5.0 Written reports showing the nature and the frequency of the supervision activities.
- 1.0-5.0 Invoices of secondment or temporary employment organisations and/or rehabilitation companies.

## Definitions

- **Long-term job seeker:** job seekers registered at Employee Insurance Scheme Administration and Collection Agency Job Centre who have done no paid work for more than half a year.
- **WSW-people:** persons working in sheltered employment schemes: persons from the target group persons working in sheltered employment schemes, as referred to in the Sheltered Employment Act;
- **Interns / pupils:** that carry out in the framework of a training program, organised by an educational institution, actual work in

equivalent circumstances to employees under a contract of employment and that carry out work with a view to acquiring occupational experience.

- **Operational hours:** hours by operational staff are devoted to the project, which includes temporary employees and hours of subcontractors. (E.g. hours of performer, leader, employee, engineer, etc.)

### Additional information

- Clear and convincing proof must be supplied that the relevant employee has been employed on the project in question.

### References

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CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# Health

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# HEA 91 Safety

## Purpose of the credit

Ensure activities on the project location are carried out safely.

The core issues are here that the activities should be carried out without adverse consequences for both the personnel at the project location and third parties.

## Credit criteria

There can be assigned up to 2 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that both before and during the project a safety engineer is involved in the project
2.0	1	Where the provided evidence demonstrates that the safety engineer is at least weekly in attendance on the project

## Criteria requirements

The following demonstrates that there is compliance:

1 point:

- 1.0 There is an agreement with a safety engineer for the project in question with description of tasks and time allocation;
- 1.1 If the safety engineer is in service of the main contractor (contract of employment) tasks and time commitment has to be described in a separate document;
- 1.2 The safety engineer is demonstrably involved in the realisation of the Health and Safety-project plan, including the risk inventory;
- 1.3 The safety engineer can demonstrate that on regular basis inspections have been carried out at the project location.

1 point:

- 2.0 First point has been achieved.
- 2.1 The safety engineer can demonstrate that he is in attendance on the project at least weekly.
- 2.2 Reports of visits on site, inspection reports, minutes of safety meetings and actions taken can be demonstrated.

## Additions to the criteria requirements

-

## Required evidence

### Planning phase

- 1.0-1.1 An agreement with a safety engineer or a contract of employment;
- 1.2 Health and Safety-project plan that has been signed by the safety engineer;
- 1.2 A complete, signed and approved project-risk inventory; (this can be a part of the H&S-project plan)

### Execution phase

- 1.3, 2.1, 2.2 Reports of visits, inspection reports, meeting reports.

## Definitions

**Safety engineer** a person who is in possession of one of the following diplomas:

- Safety expert; (MVK)
- Safety expert; (HVK)
- Safety expert; (MOSHE)

**Regular based:** At least once a week during the project.

**Periodic manned:** Daily.

**Third parties:** local residents, visitors and passers-by.

**Safety plan:** Plan according to Bouwbesluit 2012 art. 8.3

## Additional information

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## References

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CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# HEA 92 Air quality

## Purpose of the credit

Limiting nuisance through air pollution for man and the physical environment during demolition activities.

## Credit criteria

There can be assigned up to 4 points as follows:

Ref.	Points	
1.0	1	Where provided evidence demonstrates that the project meets the criteria requirements of the first point;
2.0	1	Where provided evidence demonstrates that the project meets the criteria requirements of the second point;
3.0	1	Where provided evidence demonstrates that the project meets the criteria requirements of the third point;
4.0	1	Where provided evidence demonstrates that the project meets the criteria requirements of the fourth point;

## Criteria requirements

The following demonstrates that there is compliance:

First point:

- 1.0 An environmental manager has been appointed who is informed of possible risks of (hazardous) substances in the demolition object, the work plan and the procedures, measures and inspections included;
- 1.1 The work plan and the associated procedures (Health and Safety plan, emergency plan, etc.) have been jointly geared to the (hazardous) substances in the demolition object such as also shown by the previously performed substances Inventory (MAT 91);
- 1.2 A forecast has been made of the occurring risks concerning the air quality during the demolition project.

Second point:

- 2.0 First point has been achieved and:
- 2.1 There is a good, timely and correct information provision to local residents on the different events in the construction process in relation to air pollution, for both first and second-line buildings;
- 2.2 There is a complaint management procedure where complaints are dealt with at least within 24 hours and resolved within 5 working days;
- 2.3 Neighbours of the project are compensated at serious nuisance, for example by means of a night in a hotel.

Third point:

- 3.0 Second point has been achieved and:
- 3.1 Measurement/monitoring of the air quality around the construction site is carried out by means of periodic manned measurement/monitoring, this focuses on dangerous substances.

Fourth point:

- 4.0 Third point has been achieved and:
- 4.1 There is continuously measurement and monitoring of the air quality on the demolition project.

## Additions to the criteria requirements

### Required evidence

#### Planning phase

- 1.1 A copy of the work plan, the Health and Safety-plan and the emergency plan, which shows that they have been jointly geared to the substances in the demolition object, such as also shown by the previously performed substances inventory (MAT 91).
- 1.1-4.1 A declaration that a competent and qualified environmental manager is appointed who is informed of possible risks of (hazardous) substances in the demolition object present, the work plan and the procedures, measures and inspections included in that.



- 2.1-2.3 A description of the information and complaints procedure for local residents
- 3.1 A description of the form and frequency of the measurement/monitoring of dust production during demolition activities around the construction site, directed at dangerous substances (quartz, asbestos, other dangerous substances).

#### Execution phase

- 1.1 The measures and provisions that had been included in the work plan, the Health and Safety-plan and the emergency plan during the project (where applicable) have also been applied and implemented in accordance with that specification.
- 1.1-4.1 A report and/or declaration of the competent and qualified environmental manager that measures and provisions have been applied and implemented in accordance with the agreement.
- 2.1-2.3 A report and/or declaration on the way in which information provision for local stakeholders has taken place and the way in which (possible) complaints have been handled, in relation to taken measures and procedures.
- 3.1-4.1 A report with an overview of the performed measurements/monitoring operations of dust production on and around the construction site with associated results and possible measures in connection with those results.

### Definitions

**Environmental manager:** An environmental manager operates as intermediary between contractor and surrounding and has as his primary task to be accessible and to offer a listening ear to complaints, questions and comments.

**Competent expert:** A person who has Demonstrably (CV) knowledge and skills on the measurement and reporting of vibrations.

**Periodic;** At least once a week during the project.

**Serious nuisance:** Nuisance which the normal functioning of workers, passerby and residents hinders.

### Additional information

### References

<http://www.infomil.nl/onderwerpen/klimaat-lucht/luchtkwaliteit/vragen-antwoorden/rekenen-meten>

[http://www.wiki.dgbc.nl/index.php/Hea\\_8\\_Interne\\_luchtkwaliteit](http://www.wiki.dgbc.nl/index.php/Hea_8_Interne_luchtkwaliteit)

Bouwbesluit 2012

# Materials

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# MAT 91 Materials

## Purpose of the credit

Promoting the reuse of materials arising from the demolition and disassembly and ensuring that these are used as much as possible as secondary/new raw material.

## Credit criteria

There can be assigned up to 20 points as follows:

Ref.	Points	
1.0	3	Where the provided evidence demonstrates that after completion of the material module the result is greater than 30
2.0	5	Where the provided evidence demonstrates that after completion of the material module the result is greater than 40
3.0	7	Where the provided evidence demonstrates that after completion of the material module the result is greater than 50
4.0	10	Where the provided evidence demonstrates that after completion of the material module the result is greater than 60
5.0	15	Where the provided evidence demonstrates that after completion of the material module the result is greater than 70
6.0	20	Where the provided evidence demonstrates that after completion of the material module the result is greater than 80

Where the provided evidence demonstrates that less than 30 points are assigned no points have been scored.

## Criteria requirements

The following demonstrates that there is compliance:

3 points:

- 1.0 A substances inventory is present.
- 1.1 After completion of the material module it is found that the result is greater than 30.
- 1.2 On the basis of contracts with customers and transport documents it can be verified who is the recipient of the material. There is a digital overview of non-recyclable materials with destination and final processing.

5 points:

- 2.0 Previous 3 points have been achieved and:
- 2.1 The result is greater than 40;
- 2.2 It can be demonstrated that the total dump is less than 5% of the total released substances. (Exclusive of dangerous substances and asbestos)

7 points:

- 3.0 Previous 5 points have been achieved and:
- 3.1 The result is greater than 50.

10 points:

- 4.0 Previous 7 points have been achieved and:
- 4.1 The result is greater than 60.

15 points:

- 5.0 Previous 10 points have been achieved and:
- 5.1 The result is greater than 70;
- 5.2 It can be demonstrated that the released substances have actually been used for the previously established application.

20 points:

- 6.0 Previous 15 points have been achieved and:
- 6.1 The result is greater than 80.

### Planning phase

- 1.0-6.1 A substances inventory is present;
- 1.0-6.1 There is a completed material module containing the estimated quantities and their destination;
- 1.0-6.1 There are signed contracts with customers and handlers/processors;

### Execution phase

- 1.0-6.1 A substances inventory is present;
- 1.0-6.1 There is a completed material module containing the estimated and real quantities and their destination;
- 1.0-6.1 There are demonstrably transport vouchers, weighing bills and proofs of receipt of removed materials;
- 1.0-6.1 There is a current digitally overview of non-recyclable materials with destination and final processing.
- 1.0-6.1 A complete waste materials record is present.
- 1.0-6.1 There is a current digitally overview of non-recyclable materials with destination and final processing.

## Definitions

Materials module such as model can be downloaded from [www.breeam.nl](http://www.breeam.nl)

The Lansink Ladder is built up from the following 'steps'

- Prevention;
- Reuse;
- Sorting and recycling;
- Incineration;
- Dumping;

In the National Waste Management Plan 2002 - 2012 (LAP) the classification has been refined:

- Quantitative prevention: the occurrence of waste materials is prevented or limited;
- Qualitative prevention: in the manufacture of substances, preparations or other products use is made of substances and materials that cause after use of the product no or as few as possible adverse consequences for the environment;
- Useful application through product reuse: substances, preparations or other products are used again after use of the product;
- Useful application through material reuse: substances and materials of which a product consists are used again after use of the product;
- Useful application as fuel: waste materials are applied with a main use as fuel or for another form of energy generating;
- Incineration as form of disposal: waste materials are disposed of by incinerating them on land.
- Dumping: waste materials are dumped.

## Additional information

## References

LAP

Material module

[http://www.wiki.dgbc.nl/index.php/Mat\\_1\\_Bouwmaterialen](http://www.wiki.dgbc.nl/index.php/Mat_1_Bouwmaterialen)

Bestand: Slim Slopen Tool 2.0 v071212.xlsm.zip

# Energy

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# ENE 91 Energy efficient equipment

## Purpose of the credit

Deployment of plant, material and people on the demolition site, in such a way that in terms of energy use the most efficient performance can be achieved

## Credit criteria

There can be assigned up to 3 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that 50% of all used equipment on the project site has as minimum a certified Tier 4 level or higher;
1.1	1	Where the provided evidence demonstrates that 75% of all used equipment on the project site has as minimum a certified Tier 4 level or higher;
3.0	1	Where the provided evidence demonstrates that 90% of all used equipment on the project site has as minimum a certified Tier 4 level or higher;

## Criteria requirements

The following demonstrates that there is compliance:

1 point:

- 1.0 50% of all used equipment on the project site has as minimum a certified Tier 4 level or higher; (weighted according to the total energy consumption on the project site)

1 point:

- 1.1 75% of all used equipment on the project site has as minimum a certified Tier 4 level or higher; (weighted according to the total energy consumption on the project site)

1 point:

- 1.2 90% of all used equipment on the project site has as minimum a certified Tier 4 level or higher. (weighted according to the total energy consumption on the project site)

## Additions to the criteria requirements

- 1.0-1.2 From all equipment used are certificates concerning the Tier level.  
 1.0-1.2 External transport is excluded from this credit (See TRA 91 and TRA 92)

## Required evidence

### Planning phase

- 1.0-1.2 A list of all equipment planned to be used on the project site including the use of energy per equipment per hour and the expected duration the equipment is used on the project, the Tier class and the expected total amount of energy use.  
 1.0-1.2 A copy of the relevant certificates of Tier class for all demolition cranes, shovels, bobcats and aggregates used on the demolition project site.

### Execution phase

An inspection report of the assessor and photographic evidence;

- 1.0-1.2 Schemes for use of equipment, machine logbooks, photographs of used equipment on the demolition project site, copies of certificates.  
 1.0-1.2 Daily reports containing all used equipment and their Tier class, the use of energy per equipment per hour, the duration the equipment is used on the project site and the total energy consumption. The daily reports are to be merged into a total overview.

## Definitions

**Project site:** The site where the demolition/disassembly will be carried out.

## Additional information

-

## References

-

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# ENE 92 Carbon footprint

## Purpose of the credit

Reduce the CO<sub>2</sub> and NO<sub>x</sub> emission by means of energy saving measures and the pertinent management tools.

## Credit criteria

There can be assigned 1 point as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the contractor has: <ul style="list-style-type: none"> <li>• An externally verified carbon footprint and</li> <li>• Where the provided evidence demonstrates that the contractor has a proof that an energy examination has taken place and</li> <li>• Where the provided evidence demonstrates that the contractor has an energy saving plan</li> </ul>

## Criteria requirements

The following demonstrates that there is compliance:

1 point:

- 1.0 There is an externally verified carbon footprint;
- 1.1 There is a written proof that an energy examination has taken place;
- 1.2 There is a written energy saving plan.

## Additions to the criteria requirements

Where the contractor has a CO<sub>2</sub> performance ladder 3 certificate or higher there is compliance.

## Required evidence

-

### Planning phase

- 1.0 A copy of the report CO<sub>2</sub> footprint;
- 1.1-1.2 A copy of energy investigation and savings plan;
- 2.0-4.1 Copies of obtained certificates;
- 2.0-4.1 Description of implemented innovative energy projects.

### Execution phase

- 1.0-4.1 A copy of the report in which CO<sub>2</sub>-emission reductions have been monitored and registered;
- 1.0-4.1 A letter of the main contractor containing:
  - the confirmation that procedures for controlling and reducing CO<sub>2</sub> emissions have been implemented;
  - the name and function of the party that during the project was responsible for monitoring and controlling the impact of the construction site.



## Definitions

### The levels

#### Level 1, 2 and 3: Own CO<sub>2</sub>-house in order

These first levels of the ladder lead to the 'carbon footprint' (scope 1 and 2) of the business and its projects with reduction aims and the necessary internal and external communication and an active role in the sector or chain. This is based on examination relating to its own energy consumption with achievable objectives for reduction.

**Particularly at level 3** and higher external communication is a requirement for an effective operation of the ladder within the sector and outside. The permanent accessibility of the published information merits explicit attention.

#### Level 4: Together with and for the sector and/or branch of industry

In addition to the insight at level 3 and lower in the scope 1 and 2 emissions at level 4 also scope 3 emissions are involved. The characteristic of level 4 lies in innovative initiatives and results for CO<sub>2</sub>-aware action and reduction of indirect emissions, scope 3 related. This on the basis of the value chain thinking, the innovative (new knowledge and insights), the joint contributions to reduction; taking initiative/participating, cross-business thinking, the open character, the Dialog with the outside world etc. what must be implemented in all aspects at this level in a policy-related and plan-based way.

#### Level 5: At social (national) level

Particularly at this level the CO<sub>2</sub>-performances obtain a social meaning: own tenderers take part, public commitment, co-operation with GO and/or NGO, achievement of stated aims etc.

Source SKAO, CO<sub>2</sub>-Performance ladder. Generic Manual, Version 2.1

## Additional information

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## References

[www.skao.nl](http://www.skao.nl) [www.wiki.dgbc.nl](http://www.wiki.dgbc.nl)

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# Transport

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# TRA 91 Staff transport

## Purpose of the credit

Reduce emissions of CO<sub>2</sub> and NO<sub>x</sub> during transport of personnel.

## Credit criteria

There can be assigned up to 4 point as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the business has the disposal of an electronic track and trace system
2.0	1	Where the provided evidence demonstrates that after completion of the transport module (personnel) the result is greater than 20
3.0	1	Where the provided evidence demonstrates that after completion of the transport module (personnel) the result is greater than 30
4.0	1	Where the provided evidence demonstrates that after completion of the transport module (personnel) the result is greater than 40

Where the provided evidence demonstrates that point 1 has not been achieved, no further points can be assigned.

## Criteria requirements

The following demonstrates that there is compliance:

In this case it concerns all vehicles involved on this project, whereby on the project at least 75% of the transport should take place with this vehicles.

In case of use of public transport, See MAN 93 (Additional environmental effort)

First point:

- 1.0 First point has been achieved if electronic track and trace system is present and Demonstrably and in use;

Second point:

- 2.0 The first point has been achieved and:  
 2.1 After completion of the staff transport module it is found that the result is greater than 20;  
 2.2 An overview is available in which all transport movements have been documented;  
 2.3 A completed list of all staff transport movements (Template Staff transport);  
 2.4 Track and trace system and personnel planning is Demonstrably.

Third point:

- 3.0 Second point has been achieved and:  
 3.1 The result from the staff transport module is greater than 30;

Fourth point:

- 4.0 Third point has been achieved and:  
 4.1 The result of the staff transport module is greater than 40;

## Additions to the criteria requirements

-

## Required evidence

### Planning phase

- 1.0 Demonstrably operational track and trace system;  
 1.0-4.1 List of scheduled means of transport and people;

1.0-4.1 Completed transport module planning (Personnel).

#### **Execution phase**

An inspection report of the assessor and photographic evidence that proves that track and trace system is in use.

- 1.0 Demonstrably operational track and trace system;
- 1.0-4.1 Completed transport module Execution phase (Personnel);
- 1.0-4.1 Track and trace results can be produced;
- 1.0-4.1 Declaration of the company that at least 75% of the listed vehicles is used;
- 1.0-4.1 List of vehicle licence plates and the corresponding energy label;
- 1.0-4.1 A completed list of all staff transport movements (Template Staff transport);
- 1.0-4.1 The completed staff transport list must be signed by the demolition company.

#### **Definitions**

Electronic track and trace system: Track and trace system based on electronic registration and GPS;

#### **Additional information**

-

#### **References**

Transport module is part of Bestand: Slim Slopen Tool 2.0 v071212.xlsm.zip

Template Staff transport.

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# TRA 92 Transport of equipment and material

## Purpose of the credit

Reduce emissions of CO<sub>2</sub> and NO<sub>x</sub> during transport of equipment and material.

## Credit criteria

There can be assigned up to 20 points as follows:

Ref.	Points	
1.0	10	Where the provided evidence demonstrates that after completion of the transport module (equipment and material) the result is greater than 20
2.0	15	Where the provided evidence demonstrates that after completion of the transport module (equipment and material) the result is greater than 30
3.0	20	Where the provided evidence demonstrates that after completion of the transport module (equipment and material) the result is greater than 40

Where the provided evidence demonstrates that less than 20 points are assigned no points have been scored.

## Criteria requirements

The following demonstrates that there is compliance:

10 point:

- 1.0 After completion of the transport module it is found that the result is greater than 20;
- 1.1 An overview is available in which all transport movements have been documented;
- 1.2 Verification can be done based on transport documents.

15 points:

- 2.0 The first point has achieved and:
- 2.1 After completion of the transport module it is found that the result is greater than 30.

20 points:

- 3.0 The second point has achieved and:
- 3.1 After completion of the transport module it is found that the result is greater than 40.

## Additions to the criteria requirements

- 1.0-3.1 Administration for this credit must be clear and transparent and adequately to provide insight into the results.

## Required evidence

### Planning phase

- 1.0-4.1 List of scheduled means of transport;
- 1.0-4.1 Completed transport module planning phase. (Equipment and material)

### Execution phase

- 1.0-4.1 Relevant means of transport have been used;
- 1.0-4.1 Completed transport module execution phase; (Equipment and material)
- 1.0-4.1 Transport module signed by the demolition company;
- 1.0-4.1 Transport slips of all transport movements (Weight bills and other transport tickets);
- 1.0-4.1 List of all means of transport and the corresponding licence plate and Euro category.

## Definitions

Electronic track and trace system: Track and trace system based on electronic registration and GPS;

## Additional information

For this credit points can be obtained if an effort is made to limit the CO<sub>2</sub> and NO<sub>x</sub> emission by transport movements of equipment and material.

## References

Transport module is part of Bestand: Slim Slopen Tool 2.0 v071212.xlsm.zip

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# TRA 93 Prevention of traffic nuisance

## Purpose of the credit

Minimise traffic nuisance caused by the demolition and disassembling activities as much as possible.

## Credit criteria

There can be assigned up to 4 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that an inventory of all traffic movement the vicinity of the project is made and a transport plan has been prepared.
2.0	1	Where the provided evidence demonstrates that a transport diversion plan has been drawn up.
3.0	1	Where the provided evidence demonstrates that during the demolition extra parking facilities have been implemented so that the existing parking facilities are not overloaded by staff.
4.0	1	Where the provided evidence demonstrates that 75% of the transport takes place outside peak times.

## Criteria requirements

The following demonstrates that there is compliance:

First point:

For the demolition and disassembly project a transport plan has been developed that includes all forms of transport which are relevant for the local environment. In the transport plan the local environment has been well mapped, such as:

- 1.0 Inventory of all traffic movements in the vicinity of the project;
- 1.1 Major thoroughfares;
- 1.2 Public transport connections;
- 1.3 Important sites, which generate many visitors;
- 1.4 Take measures to inform users in advance;
- 1.5 Specify measures (and later also take them) to limit hindering of the existing traffic flows as much as possible.

Second point:

- 2.0 The first point is achieved and:
- 2.1 For the demolition project a traffic diversion is developed, if depositions in the public area are necessary;
- 2.2 The traffic diversion plan should be prepared for all possible movements and users, such as trucks, cars, cyclists, pedestrians, etc.;
- 2.3 The redirection should be clear and safe;
- 2.4 Improper use must be prevented;
- 2.5 Users must be sufficient informed in advantage.

Third point:

- 3.0 The first point is achieved and:
- 3.1 Parking facilities are mapped;
- 3.2 The existing parking facilities in the area are not in use by the demolition project. This can be realized by, for example: All parking on site to accommodate (inside the gates).
- 3.3 A separate car park at another location. (Other ideas are also possible)

Fourth point:

- 4.0 The first point is achieved and:
- 4.1 The peak moments of the area mapped;
- 4.2 Measures are taken so that work traffic takes place outside peak time.

## Required evidence

### Planning phase

- 1.0-1.5 Transport plan;
- 2.0-2.5 Traffic diversion plan;
- 3.0-3.3 There is a summary of all parking facilities and the written measures to be taken.

### Execution phase

An on site inspection that confirms:

- 1.1-1.5 The traffic plan is used and actual dated;
- 2.0-2.5 A current diversion plan, verifiable diversions; pictures of the redirections.
- 3.0-3.3 Summary of parking situation and measures taken; picture of the extra parking facility for the project
- 4.0-4.2 A log with traffic times proving 75% is outside peak hours

## Definitions

**The morning rush hour** is the period from 7:00 to 9:00.

**The evening rush hour** is between 16:30 and 18:30.

**Diversion plan:** a plan with a map indicating the best route avoiding vulnerable areas and most safe route not to pass schools, bus stations, etc.. The plan must exist of available roads, driving directions, max speed, dangerous places with pedestrians, children etc in the direct area and the connections to the main motorways.

## Additional information

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## References

Transport module is part of Bestand: Slim Slopen Tool 2.0 v071212.asm.zip



# Water

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# WAT 91 Water use

## Purpose of the credit

Encourage construction sites that are managed from an environmental perspective in a justified way in terms of limitation of water consumption.

## Credit criteria

There can be assigned 1 point as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that objectives for water savings have been determined and are monitored, and these objectives and the actual water consumption of activities on the construction site are recorded in a report.

## Criteria requirements

The following demonstrates that here is compliance:

First point:

- 1.0 The contractor shall appoint a person who is responsible for the monitoring and collection of data;
- 1.1 Suitable measures and adequate choices with regard to the procedure must be followed and implemented. (Such as nebulisers instead of sprayers, location/place of wetting, etc.)
- 1.2 Objectives for the water saving will be posted on the project (goals should be established for each project);
- 1.3 Water consumption should be monitored weekly, results and deviations of the goals should be communicated with the employees;

## Additions to the criteria requirements

-

## Required evidence

### Planning phase

- 1.0 Appointment of a person responsible for the monitoring and collection of data;
- 1.1 Documented measures, procedures, clear description of used water saving equipment;
- 1.2 Written objectives for the save of water;
- 1.3 Written Instructions about the goals and communication with employees

### Execution phase

An inspection report of the assessor and photographic evidence;

- 1.1 Photos of used water saving equipment;
- 1.2 Recorded results of the objectives as mentioned in the planning phase.
- 1.3 Written report of weekly water monitoring;
- 1.3 Written deviations and copy of meetings with the employees where the goals and deviations are communicated.

## Definitions

**Construction site:** The plant where the demolition or disassembling take place.

**Objectives:** These are requested in this BREEAM-NL credit to promote the process of the establishment of aims and to monitor these to achieve them. Because objectives are project-specific by nature, BREEAM-NL deliberately specifies no values

## Additional information

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## References

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# Pollution

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

## POL 91 Noise pollution

### Purpose of the credit

Limiting noise pollution for the local environment and employees during demolition and disassembly activities.

### Credit criteria

There can be assigned up to 5 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the step plan of the Building Noise Circular 2010 is passed in the planning phase.
2.0	1	Where the provided evidence demonstrates that comprehensive measures have been taken to limit noise levels and noise sources and nuisance is prevented.
3.0	1	Where the provided evidence demonstrates that noise level during the project is no reason for complaints about noise nuisance of existing buildings or nature areas that are situated in the immediate surrounding of the demolition location.
4.0	1	Where the provided evidence demonstrates that on the construction site advantage is taken of continuous monitoring of noise.
5.0	1	Where the provided evidence demonstrates that the Best Available Quiet Technologies (BAQT) and the most favourable procedure are applied.

A map is required indicating the demolition area and surroundings.

### Criteria requirements

The following demonstrates that there is compliance:

First point:

- 1.0 The step plan Building Noise Circular should be elaborated in the planning phase.
- 1.1 The step plan Building Noise Circular should be result in concrete measures to be documented and applied.
- 1.2 Measures should be discussed detectable by the staff.

Second point:

- 2.0 First point has been achieved.
- 2.1 Comprehensive measures means at least complying with **4** of the following points:
- 2.2 A good, timely and correct information provision to local residents on the different events in the demolition process in relation to noise, for both first and second-line buildings (letter to the residents);
- 2.3 A prohibition on construction site radios within 100 meters of buildings, obligation to turn off engines and machines if not in use and encouraging environmental awareness of employees (Aware builders);
- 2.4 Monitoring noise levels by means of periodic manned monitoring;
- 2.5 Carry out activities exclusively between hours as in the local regulations and APV or the contract;
- 2.6 A complaint management procedure where complaints are handled at least within 24 hours;
- 2.7 Local residents are compensated at serious nuisance, for example by means of a night in a hotel;
- 2.8 A speed restriction on work roads;
- 2.9 Appointing an environmental manager.

Third point:

- 3.0 First point has been achieved.
- 3.1 A noise investigation is carried out in accordance with the manual Measure and Count Industrial Noise (MCIN) to the expected long-term average assessment level (Lar, LT) and the maximum noise level (LA, max) as a result of the noise source at the place of the normative noise-sensitive destinations. Here the noise level must be determined at the place of the facade and of the interior level.
- 3.2 The noise investigation must be carried out by a competent expert;
- 3.3 The investigation is to evaluate the measures are taken and, if necessary, to adjust based on the noise standards and results from this report.

Fourth point:

- 4.0 First point has been achieved.
- 4.1 Monitoring noise levels continuously by means of a calibrated class 1 system provided with weather resistant microphone.
- 4.2 Monitoring should be implemented in accordance with "Counting and measuring instruction noise nuisance 2006 SC78349".
- 4.3 To prevent complaints or excessive noise, the threshold values should be set as specified at the second point.
- 4.4 Continuous monitoring of noise is to evaluate the measures taken and, if necessary, to adjust based on the noise standards.

Fifth point:

- 5.0 First point has been achieved.
- 5.1 Quiet technologies give a considerable noise reduction relative to traditional demolition and especially also a much more even noise level. For example by predrilling, hydraulic demolition, noise-reducing demolition hammers or time limitation. The most favourable procedure can relate to the layout of the construction site and/or the mutual co-ordination of work processes with the aim to avoid noise nuisance as much as possible.

## Additions to the criteria requirements

If the noise level resulting from the terrain or building is higher than the values from Table 1, source-based measures must be taken.

Table 1	07:00–19:00 uur	19:00–23:00 uur	23:00– 07:00 uur
LAr,LT on the facade of sensitive buildings	45 dB(A)	40 dB(A)	35 dB(A)
LAr,LT in-sensitive buildings and adjoining	30 dB(A)	25 dB(A)	20 dB(A)
LAm <sub>ax</sub> on the facade of sensitive buildings	65 dB(A)	60 dB(A)	55 dB(A)
LAm <sub>ax</sub> in-sensitive buildings and adjoining	50 dB(A)	45 dB(A)	40 dB(A)

## Required evidence

### Planning phase

- 1.0-5.1 A report showing the step plan building Noise Circular is followed;
- 2.0-2.9 Corresponding evidence such as letter to the residences, timetables, Local regulations (APV), planning of periodic manned monitoring, complaint procedure, planned speed restrictions and contract with the environmental manager;
- 1.0-1.2 Demonstrably consultation with employees about the objectives and the method of construction to reduce noise;

### Execution phase

- 2.0-2.10 Results of the comprehensive measures taken; Corresponding evidence such as letter to the residences, timetables, Local regulations (APV), Results of periodic manned monitoring, complaint procedure, speed restrictions and contract with the environmental manager;
- 3.0-4.4 Results of the noise investigation and/or monitoring, carried out by a competent expert;
- 3.0-3.3 Report of the noise investigation and the taken measures;
- 5.0-5.1 Evidence of using quiet technologies, procedures and work process.

## Definitions

**Noise level** level of the locally occurring noise (LA), expressed in dB(A), according to the International Electrotechnical Commission (IEC) rules, as incorporated in NEN-EN-IEC-60651, 1994.

**Long term averaged noise level (LAr, It)** energy-related average of the alternating noise levels established and assessed according to the HMRI.

**Noise-sensitive buildings** in accordance with article 1 of the Noise Nuisance Act, in addition to dwellings also education buildings, hospitals and nursing homes and other healthcare buildings have been indicated as noise-sensitive buildings.

**Environmental manager** A environmental manager operates as intermediary between contractor and surrounding and has as his primary task to be accessible and to offer a listening ear to complaints, questions and comments.

**Competent expert** A person who has Demonstrably (CV) knowledge and skills on the measurement and reporting of noise.

**Periodic manned monitoring** At least once a week during the project.

**Serious nuisance** See table 1

## Additional information

### Step plan distilled from Building Noise Circular 2010:

1. Determine the probability of nuisance:
  - Go through the questionnaire at the earliest possible stage to establish whether attention must be paid to noise. The questionnaire can like the step plan be consulted online, see references.
2. Permit or exemption:
  - The prevention of building noise is regulated in the integrated physical environment permit or a municipal regulation is applied.
3. Determine the measure of nuisance:
  - Using an acoustic report whether or not in combination with the distance table the degree of nuisance can be determined.
4. Deployment of quiet technologies:
  - To prevent building nuisance, preferably source-centred measures are taken.
5. Conditions in exemption or permit:
  - Specific solutions (bespoke software) can be documented in conditions.
6. Control and enforcement:
  - If there are conditions attached to a license or exemption they must be checked.

## References

Reference [http://www.wiki.dgbc.nl/index.php/Pol\\_8\\_Geluidsoverlast](http://www.wiki.dgbc.nl/index.php/Pol_8_Geluidsoverlast)

Manual measure and count industrial noise, issue 1999 (HMRI, 1999)

Calculation and measuring instruction noise nuisance 2006 SC78349

NEN-EN-IEC-60651, 1994

<http://www.bewustebouwers.nl/>

<http://www.infomil.nl/onderwerpen/hinder-gezondheid/geluid/specifieke/bouwlawaai-0/hinder/>

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# POL 92 Dust reduction

## Purpose of the credit

Limiting dust nuisance for man and physical environment during demolition and disassembling activities.

## Credit criteria

There can be assigned up to 4 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the business complies with 5 criteria requirements (1-11)
2.0	1	Where the provided evidence demonstrates that the business complies with 7 criteria requirements (1-11)
3.0	1	Where the provided evidence demonstrates that the business complies with 9 criteria requirements (1-11)
4.0	1	Where the provided evidence demonstrates that the business complies with 9 criteria requirements (1-11) and also complies with the criteria under 12 and 13

## Criteria requirements

1.0-4.0 The following demonstrates that there is compliance:

1. There is a designated person responsible for carrying out measures and inspections on the site;
2. The construction site has been arranged so that dust-causing activities take place as far as possible from receptors in the physical environment; (<200 meters)
3. Important construction site roads have been paved to reduce the dust being blown about as a consequence of transport and traffic;
4. Measures have been taken to limit dust at the storage of demolition waste by means of a cover; (A dustproof cover)
5. Wind reduction barriers (No nets) are constructed to reduce dust-raising activities;
6. The site is kept wet and clean (nature moisture) by means of spraying;
7. There are measures taken to limit dust during the demolition work at the source; (Near the jib of the demolition crane or crusher, the feed nozzle of the crushing plant, the sieving plant, the drop points etc.)
8. Drop heights of demolition rubble have been minimised;
9. Buildings or building parts to be demolished are packed;
10. A load that leaves the construction site is covered by means of sail or metal cover;
11. Freight traffic that leaves the construction site is cleaned or jet-cleaned;
12. The visual monitoring of dust production on and around the construction site by means of periodic manned monitoring;
13. The continuous visual monitoring of dust production during the demolition activities on the construction site.

## Additions to the criteria requirements

### Required evidence

#### Planning phase

- 1.0-4.0 A copy of design and specification descriptions and (site arrangement) drawings in which the measures to be taken and provisions for dust reduction have been stated or specified;
- 1.0-4.0 Demonstrably consultations with employees about the objectives for dust reduction, procedures and enforcement of the measures;
- 1.0-4.0 A declaration that a competent and qualified person is responsible for the execution of measures and inspections on the site and compliance with the agreements with regard to this by other persons and parties on the construction site
- 1.0-4.0 A description of the form and frequency of the visual monitoring of dust on and around the construction site.

#### Execution phase

- 1.0-4.0 Evidence that no visible dust is present on or around the construction site;
- 1.0-4.0 The measures and provisions that were included in design and specification descriptions and (site arrangement) drawings during the project have also been applied and implemented in accordance with that specification
- 1.0-4.0 A declaration of the competent and qualified person that measures and provisions have been applied and implemented in accordance with agreement.
- 1.0-4.0 A report with an overview of the performed visual inspections on and around the construction site with associated results and possible measures in connection with those results.
- 1.0-4.0 Weekly photos, reports, reports of measures must be made to demonstrate the requirements are met.

## Definitions

**Responsible person** Project manager, Environmental manager or Safety officer

## Additional information

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## References

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CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE



# POL 93 Vibration

## Purpose of the credit

Limiting nuisance vibrations for man and physical environment during demolition and disassembling activities.

## Credit criteria

There can be assigned up to 5 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that prior to the activities a forecast has been made of the occurring vibration levels.
2.0	1	Where the provided evidence demonstrates that a baseline measurement has been made in the form of expertise and a survey of adjacent properties.
3.0	1	Where the provided evidence demonstrates that there is compliance with the document Measurement and Assessment Guideline for vibrations
4.0	1	Where the provided evidence demonstrates that extensive measures have been taken to limit vibration levels and vibration sources and nuisance is prevented.
5.0	1	Where the provided evidence demonstrates that on the construction site use is made of the continuous monitoring of vibrations.

## Criteria requirements

The following demonstrates that there is compliance:

First point:

- 1.0 On projects where activities are carried out at distances shorter than 40 meters from vibration-sensitive objects or processes a forecast of the occurring vibration levels should be prepared.
- 1.1 Demonstrably consultation with the staff about the objectives and methods to reduce vibration;

Second point:

- 2.0 An independent architectural consultancy firm must make an on the spot survey of adjacent buildings and yard separations within a radius of 50 meters around the project location.
- 2.1 The current state of the exterior of the buildings should be documented by means of photographs and a written constructional report.
- 2.2 Residents and/or users should be informed prior to the survey in writing of the activities and the purpose thereof.
- 2.3 In order to obtain the third point in addition to the exterior also the interior should be documented, after prior authorisation of the resident/user.

Third point:

- 3.0 Vibration nuisance is assessed on the basis of the maximum occurring vibration level and the average vibration level.
- 3.1 The calculated value must comply with the stated limit and target values, as stated in the document: "Measurement and Assessment Guideline for Vibrations".

Fourth point:

- 4.0 Compliance with extreme measures is understood to be at least **5** of following points:
- 4.1 A good, timely and correct information provision to local residents on the different events in the construction process in relation to vibration, for both first and second-line buildings.
- 4.2 Encouraging environmental awareness of employees (Aware builders).
- 4.3 Monitoring vibration levels by means of periodic manned monitoring.
- 4.4 Carry out activities exclusively between 07:00 and 19:00 hours.
- 4.5 A complaint management procedure where complaints are handled at least within 24 hours.
- 4.6 Local residents are compensated at serious nuisance, for example by means of a night in a hotel.
- 4.7 A speed restriction on work roads, of a maximum of 10 km/h.
- 4.8 A limitation of axle-loads of site traffic of up to 8.0 tonne.
- 4.9 Appointing an environmental manager.

Fifth point:

- 5.0 Continuous monitoring of vibration levels by means of a calibrated and certified 3D system, manned or unmanned in accordance with the fourth point.
- 5.1 To prevent complaints or excess the threshold values should be set as specified for the fourth point.
- 5.2 When exceeding the set values the project manager and the management automatically be cautioned to take appropriate measures.

## Required evidence

### Planning phase

- 1.0 Written report of vibration forecast, executed by a competent expert;
- 1.1 Report of consultation the staff about the objectives and methods to reduce vibration;
- 3.0-3.1 Copy of design and specification descriptions, in which the permitted limit and target values and/or additional measures have been indicated accurately in accordance with the "Measurement and Assessment Guideline for Vibrations".
- 4.0-4.1.0 Measuring and monitoring plan in which agreements have been described on how the results are notified to the stakeholders.
- 2.0-3.1 Constructional report of the baseline measurement of adjacent premises including photo reports.
- 2.0-3.1 Letter in which the residents and/or users are informed of the baseline measurement survey.

### Execution phase

- 2.0-5.2 Survey report of adjacent buildings and yard separations within a radius of 50 meters around the project location.
- 2.1 Photographs from the current state of the exterior of the buildings and a written constructional report.
- 2.2 Residents and/or users should be informed prior to the survey in writing of the activities and the purpose thereof.
- 2.3 Photographs from the current state of the interior of buildings;
- 2.3 Written authorisation of the resident/user to take photos of the interior.
- 3.0-3.1 Report of vibration nuisance with the maximum occurring vibration level and the average vibration level according to "Measurement and Assessment Guideline for Vibrations".
- \*4.1 Report of timely and correct information provided to local residents on the different events in the construction process in relation to vibration, for both first and second-line buildings.
- \*4.2 Communication with employees concerning the encouraging environmental awareness of employees (Aware builders).
- \*4.3 Periodic monitoring report from the vibration levels;
- \*4.4 Timesheets with evidence that activities are exclusively between 07:00 and 19:00 hours carried out;
- \*4.5 A complaint management procedure.
- \*4.6 Evidence that local residents are compensated at serious nuisance such as hotel bills.
- \*4.7 Photos of traffic signs, speed limits, regulations, circulars that a speed restriction on work roads;
- \*4.8 List of trucks where the limitation of axle-loads of site traffic is max 8.0 tonne.
- \*4.9 Appointment with an environmental manager.
- 5.0 Results of the vibration analysis of the applied monitoring, carried out by a competent expert.
- 5.1 Report of appropriate measures after exceeding the set values.

\* according to the choice at the fourth point

## Definitions

**Vibrations:** A particular source can cause vibrations that are transmitted via a solid material (such as floors, walls, foundations, etc.) and exert a force on the soil. Vibrations can be caused by traffic and industrial activities. The vibration is propagated in the soil and can elsewhere deliver nuisance or even damage.

**Vibration level:** Level of the locally occurring vibration, expressed in Hz.

### Vibration-sensitive functions:

- In accordance with the measurement and evaluation directive for vibrations, there are three sorts of vibration-sensitive functions to be distinguished, including:
- Damage to buildings, for example monuments, dwellings, schools, etc.;
- Inconvenience to persons in buildings, for example people in dwellings; Faults on equipment, for example hospitals and laboratories.

**Environmental manager:** A environmental manager operates as intermediary between contractor and surrounding and has as his primary task to be accessible and to offer a listening ear to complaints, questions and comments.

**Competent expert:** A person who has Demonstrably (CV) knowledge and skills on the measurement and reporting of vibrations.

**Periodic manned monitoring;** At least once a week during the project.

## Additional information

## References

Measurement and assessment directive for vibrations (SBR, 2002) Erschütterungen im Bauwesen, DIN 4150, ISO 2631/2  
Order on mobile crushing construction and demolition waste <http://www.bewustebouwer.nl>

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# POL 94 Water pollution

## Purpose of the credit

Preventing pollution of groundwater and surface water on the construction site.

## Credit criteria

There can be assigned 2 points as follows:

Ref.	Points	
1.0	2	Where the provided evidence demonstrates that the best practice policy in relation to (the prevention of) groundwater and surface water pollution on the construction site has been implemented.

## Criteria requirements

The following demonstrates that here is compliance:

Two points:

In relation to the prevention of groundwater and surface water pollution:

- 1.0 Building and demolition waste and rubble granulate are stored on a flat and hard soil; (Steel driving plates are suitable)
- 1.1 If contaminated demolition materials are stored, it should be done in impermeable containers;
- 1.2 On site, the storage of substances should take place according to a pre-written method, whereby the relevant environmental risks are determined and measured;
- 1.3 Clearly should set out how the collection and removal of waste water from the site is governed;
- 1.4 Employees should have a demonstrably work instruction about water pollution on the demolition project.

## Additions to the criteria requirements

## Required evidence

### Planning phase

- 1.0 Documented approach regarding the storage of substances coming off the demolition project;
- 1.0-1.1 Substances Inventory, which included the degree of contamination by substances coming off;
- 1.1-1.2 Reporting on the expected environmental risks and the proposed measures;
- 1.3 Documented approach for the collection and removal of waste water resulting from the construction site to control;
- 1.4 Written instruction to employees.

### Execution phase

An inspection report of the assessor and photographic evidence;

- 1.0 Written method of the storage of substances coming off the demolition project;
- 1.0-1.1 Photographs of storage materials on the demolition rject;
- 1.1-1.2 Report of environmental risks and the proposed measures;
- 1.3 Documented approach for the collection and removal of waste water resulting from the construction site to control;
- 1.4 Written instruction to employees.

## Definitions

**Construction site:** The plant where the demolition or disassembling take place.

**Objectives:** These are requested in this BREEAM-NL credit to promote the process of the establishment of aims and to monitor these to achieve them. Because objectives are project-specific by nature, BREEAM-NL deliberately specifies no values

**Waste water:** For the Environmental Management Act all the water that is no longer usable for the user, is waste water.

## Additional information

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## References

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CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

# Land use and ecology

CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE

## LE 91 Flora & Fauna on site

### Purpose of the credit

Encouraging taking measures to protect and preserve plants and animals that are present on the demolition site during the demolition activities. Investigate possibilities to preserve existing flora and fauna for later relocation of/on the site.

### Credit criteria

There can be assigned up to 2 points as follows:

Ref.	Points	
1.0	1	Where the provided evidence demonstrates that the site before the start of the demolition activities has a nature report with work protocol that has been set up by a recognised ecologist.
2.0	1	Where the provided evidence demonstrates that the site after final delivery has a report that flora and fauna has been carried out in accordance with the requirements of the work protocol from the nature report.

### Criteria requirements

The following demonstrates that here is compliance:

#### First point

- 1.0 Before start of the demolition activities a recognised ecologist sets up a nature report in which the demolition location is described on the basis of a consultant's investigation and field visit and if necessary an inventory in the field.

This means that:

- The existing ecological values (protected plant and species of animals and general nature values) have been inventoried. The potential for plant and species of animals at the location is identified, where this is potentially related to the local environment (regional situation) of the demolition site.
- Component of the nature report is an ecological work protocol indicating how the developer can implement the project with minimal or no damage to the flora and fauna. PLEASE NOTE: here the starting point is to implement the demolition project, but with minimum disturbance to the flora and fauna.
- The contractor informs and trains the employees of the demolition company on how the ecological work protocol should be implemented.
- There is compliance with the legal obligations from the Flora and Fauna Act, the Nature Protection Act, Forestry Act and the provincial compensation principle.

#### Second point

- 2.0 A recognised ecologist has during the demolition process established that the work is done according to the work protocol and (the specific conditions of) a possibly issued exemption and draws up a certificate about this after final delivery.

### Additions to the criteria requirements

Renovation demolition

- 1.0-2.0 For renovation projects there are no additional or deviating requirements relative to the above requirements.

### Required evidence

#### Planning phase

A copy of a prepared report (nature report) containing:

- 1.0 Ecological description of the location;
- 1.0 Overview of the possible effects of the demolition activities on local ecology;
- 1.0 A work protocol containing instructions for the site supervisor to reduce or prevent possible negative effects.

#### Execution phase

A report of a recognised ecologist which shows that:

- 2.0 The activities have been carried out according to the work protocol (this can be a chapter in the previously named nature

- report);
- 1.0-2.0 There has been compliance with the relevant Dutch legislation in relation to nature and ecology.

## Definitions

### Ecological work protocol

A document that during the implementation of the demolition project offers instructions to the site supervisor to respect plants and animals, and to carry out any ecology measures effectively. An ecological work protocol offers very concrete measures to do this. A ecological work protocol is, if available, based on a 'code of conduct' recognised by the Ministry of Agriculture, Nature and Food Quality. An ecological work protocol has as its aim to fulfil the duty of care and obligations from the Nature Protection Act, and protecting heavier protected species (article 2 of the Flora and Fauna Act and red list species) and other rare species.

### Recognised ecologist

For the definition of a recognised ecologist BREEAM assumes the definition that the Regulations Service (the service of the Ministry of Agriculture, Nature and Food Quality that issues permits and exemptions in relation to the Flora and Fauna Act) adopts. A recognised ecologist is a person who:

- 1.0 At Higher Vocational Education, or university level has received a specialised training in (Dutch) ecology AND/OR
- 2.0 is employed as an ecologist for an ecological consultancy firm which is connected at the Green Consultancy Firms network and/or
- 3.0 is demonstrably actively involved in the field of the species protection and is connected to the organisations established for this in The Netherlands (such as Das en Boom, VZZ, RAVON, "Vogelbescherming Nederland", the Butterfly Foundation, natural history society, KNNV, NJN, IVN, EIS Nederland, FLORON, VOFF, SOVON, etc.).

### Code of conduct

A document in which a construction party undertakes to during particular activities to comply with the duty of care and the duty to protect more heavily protected species of the Flora and Fauna Act. This code of conduct should be approved by the Ministry of Agriculture, Nature and Food Quality. A code of conduct can be set up in a consortium by parties that carry out the same types of activities. The organisation "Bouwend Nederland" sets up at the moment this document is drawn up, such a code of conduct.

### Nature report

A an ecologist's report, in which all relevant ecological information concerning the demolition project is documented (see annex 1 for an example of the content of such a nature report). This document is set up and updated throughout the construction process by a recognised ecologist, from location choice to management of the green space. In annex 1 it is indicated which information should be included in such a nature report.

### Duty of care

The duty of care implies that human action may have no adverse consequences for the flora and fauna. The duty of care applies for all plants and animals, protected or not. In the case of protected plants or animals the duty of care applies even if an exemption has been granted. The duty of care for animals does not mean that no animals may be killed, but it does mean that, if this is necessary, this is done with as little as possible suffering (Ministry of LNV).

## Additional information

### Relevant legislation and regulations

Flora and Fauna Act (protection of indigenous plant and animal species).  
Nature Protection Act (protection of areas with specific value for Dutch nature, see <http://www.minlnv.nl>) The Spatial Planning Act obliges municipalities to draw up a zoning plan. In the zoning plan nature areas are also bounded. In the framework of the care principle, when establishing a zoning plan (change), it must be investigated whether any other legislation conflicts with this order. This means that there an investigation into flora and fauna will have to take place, to check whether no articles of the act from the nature legislation are breached.

## References

Ministry of Agriculture, Nature and Food Quality for information on the Dutch nature legislation. <http://www.minlnv.nl>  
The Flora and Fauna Act (2002): Protection and maintenance of indigenous plant and animal species.  
The Nature Protection Act (1998 - in operation from 2005)- aim: protect and maintain special nature areas.

### Relevant links:

On the website <http://www.natuurloket.nl/> you obtain insight into the presence of protected species and information on the legal provisions under which these animals and plants fall.  
Green Consultancy Firms Network: For finding a recognised ecologist. <http://www.netwerkgroenebureaus.nl/>



## LE 92 Closed soil balance

### Purpose of the credit

Limiting the environmental impacts of ground removal by reuse of ground within the same demolition site.

### Credit criteria

There can be assigned up to 2 points as follows:

Ref.	Points	
1.0	1	If at least 60% of the released ground will be reused within the demolition project.
2.0	1	If at least 80% of the released ground will be reused within the demolition project.

### Criteria requirements

The following demonstrates that here is compliance:

#### First point

- 1.0 The percentage of re-use is at least 60% and:
- 1.1 The quality of soil and dredged material shall be demonstrated by an environmental statement as mentioned in the Soil Quality Decree; (Besluit Bodemkwaliteit)
- 1.2 On the reuse of ground, the statutory duty of care and the stand still principle must be observed. This obligation means that anyone who reasonably knows or suspects that adverse effects may occur, as a result of an application, must take measures to prevent contamination or minimize the effects.
- 1.3 If the ground movements are processed in the meantime, the environmental quality should again be determined;
- 1.4 In advance the principal shall make a plan (closed soil) on which if necessary for approval can be offered to the competent authority;
- 1.5 The reuse must comply with the provisions of the Soil Quality Decree; (Besluit Bodemkwaliteit)
- 1.6 After reuse of ground, the soil must meet the intended use of the location.

#### Second point

- 2.0 First point has been achieved and
- 2.1 The percentage of re-use is at least 80%.

### Additions to the criteria requirements

### Required evidence

#### Planning phase

Prior to reusing the ground, the client / developer shall produce the following documents / statements submitted:

- 1.0-2.1 A recognized environmental quality statements of reusable ground movements as:
  - Inspection of the lot in conformity with Soil Quality Decree;
  - Recognised quality certificate
  - Manufacturer's own declaration
  - (water) Soil quality survey;
  - (water) Soil quality chart;
- 1.0-2.1 Plan of action with descriptions, schematic drawing of closed soil balance and calculated ground balance;
- 1.0-2.1 Any necessary notifications or approval of the competent authority as mentioned in the Soil Quality Decree.

#### Execution phase

- 1.0-2.1 Ground balance documents

### Definitions

- Ground movements: <http://www.bodemrichtlijn.nl/Bibliotheek/grondstromen>
- Dredged soil: <http://www.agentschapnl.nl/faq/veelgestelde-vragen-over-grond-en-baggerspecie-algemeen-en-definities>
- Stand still principle: [http://www.rivm.nl/rvs/Normen/Milieu/Bagger\\_en\\_grondnormen](http://www.rivm.nl/rvs/Normen/Milieu/Bagger_en_grondnormen)

## Additional information

- <http://www.agentschapnl.nl/onderwerp/besluit-bodemkwaliteit>
- <http://www.agentschapnl.nl/onderwerp/overzicht-publicaties-staatscourant-en-staatsblad-besluit-bodemkwaliteit>
- [http://www.agentschapnl.nl/sites/default/files/sn\\_bijlagen/Handreiking\\_Besluit\\_bodemkwaliteit-24-252539.pdf](http://www.agentschapnl.nl/sites/default/files/sn_bijlagen/Handreiking_Besluit_bodemkwaliteit-24-252539.pdf)<http://www.agentschapnl.nl/onderwerp/handhaving-uitvoeringsmethode-besluit-bodemkwaliteit-hum-bbk>

## References

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CERTIFICATION BASED ON ENGLISH VERSION OF MANUAL NOT AVAILABLE