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| Scope |
| This procedure applies to all Company projects, offices, facilities, asset and concession companies and Joint Venture (JV) projects where the Company Management System has been adopted by the JV Board. Where the Company is required to operate another party’s Management System then the requirements of the Joint Venture/Alliance Business Management System (BMS) Assessment (MSC-PR-0002) must be followed in relation to assessing the validity of third-party management systems. |

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| Purpose |
| Hand-arm vibration (HAV) is a widespread hazard for employees. HAV exposure arises from the use of hand-held power tools and hand-guided machinery. Prolonged and regular exposure to this vibration can be detrimental to employees’ health.  To protect employees and to comply with the Control of Vibration at Work Regulations, this procedure details the steps that should be taken to eliminate or control exposure. This procedure is based upon the principle of prevention where, through careful planning, exposure to vibration should be eliminated in the first instance where reasonably practicable.  Where elimination cannot be achieved this procedure requires that exposure is reduced to as low a level as is reasonably practicable. |

Procedural Requirements

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| **Procurement of Hand-Arm Vibration Monitoring Equipment for use in accordance with this procedure must be carried out in accordance with the Hand-Arm Vibration Monitoring Equipment Procedure (**[**OPS-PR-244**](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1768)**).** | | | |
|  | **EXPOSURE ACTION VALUES AND LIMIT VALUES** | | |
|  | There are no safe levels of exposure to vibration. Consequently, we must seek to eliminate exposure or reduce it to the lowest reasonably practicable level. | | |
|  | The approach of the Company is that all works will be planned to eliminate exposure to vibration at source, where practicable. If this is not practicable the Company has adopted the Health and Safety Executive’s (HSE) points system for measuring vibration exposure. | | |
|  | Where there is a diagnosis of HAVS Stage 0 on employment or following an occupational health assessment, the approach of the company is that exposure should not routinely exceed 100 points per shift/day (equivalent to the HSE Exposure Action Value). All reasonable steps should be taken to reduce exposure below this value where practicable. | | |
|  | Exposure must never exceed 350 points (50 points lower than the HSE Exposure Limit Value). This value should not be a target level because of the significant health risks associated with exposures above 100 points. | | |
|  | Where an Occupational Health Assessment diagnoses HAVS Stage 1 or Stage 2 Early, exposure to vibration should be reviewed and reduced as far as reasonably practicable in accordance with current HSE guidelines. The exposure for the affected individual must not **routinely** exceed 50 points and must never in total exceed 75 points. | | |
|  | Where an Occupational Health Assessment diagnoses HAVS Stage 2 Late or Stage 3 and the assessment recommends an employee is permanently removed from vibration exposure, individuals are prohibited from using hand-held vibrating tools/equipment. | | |
|  | **DESIGN AND PRE-CONSTRUCTION PHASES** | | |
|  | The Company is committed to work with Clients and Designers to ensure that so far as is reasonably practicable all HAV exposure is eliminated or controlled through the design process. | | |
|  | The Site Lead must ensure that, during the design and pre-construction phases, elimination of exposure is prioritised. | | |
|  | The Site Lead must ensure every element of the design is challenged to ensure that all reasonably practicable measures have been taken to achieve this and that the design contains no ‘Red Risks’ (as listed in the CITB industry guidance on the [CDM15 Regulations](http://www.legislation.gov.uk/uksi/2015/51/contents/made)). | | |
|  | **CONSTRUCTION AND OPERATIONS PHASE** | | |
|  | The Site Lead will ensure that a suitable and sufficient risk assessment of all activities that involve the use of hand-held or guided vibrating plant / equipment is carried out prior to commencement of the works using the HAV Risk Assessment form ([HSF-SF-0060b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-14474)). Where exposure cannot be eliminated, the Site Lead must ensure relevant risk control measures as identified in the assessment are contained within the Safe System of Work. | | |
|  | The approach to be taken to reduce health risks associated with vibration exposure should apply the following steps in order of priority: | | |
|  | * Consider the use of alternative technologies and working practices that avoid exposure to vibration | | |
|  | * Where exposure cannot be avoided, ensure tools are selected that minimise potential for exposure-based vibration magnitude data and suitability for the task with good ergonomic design | | |
|  | * The Site Lead must ensure that all reasonably practicable measures to avoid or reduce exposure are considered and implemented. As a last resort, where exposures cannot be reduced below the EAV, job rotation to restrict trigger time may be used to mitigate risk to health. | | |
|  | The Site Lead should undertake an assessment of potential vibration exposure levels using the HSE Ready Reckoner / Calculator for each individual task. If more than one task is being completed in a working day, the assessment should combine the number of points from each task to identify potential daily exposure. The Ready Reckoner will require the following information: | | |
|  | * Vibration magnitude of each vibrating tool to be used * The duration and frequency of exposure | | |
|  | Vibration magnitude values may be obtained from a variety of sources including manufacturers and suppliers, but it is important to select values that are representative of actual work activities so as not to underestimate potential exposures. Manufacturer’s data may be out of date or may have been collected during non-working conditions so actual exposures during work activities are likely to be higher. Confidence in the quality of the vibration magnitude data is increased if data is obtained from at least two sources. You can use the ‘recommended initial values’ for each specified tool as quoted in the updated version of Table 1 of the HSE guidance L140 as this represents vibration magnitudes in the upper part of the likely range. <http://www.hse.gov.uk/vibration/hav/source-vibration-magnitude-app3.pdf>]. | | |
|  | * + <https://www.hilti.co.uk/havs> | | |
|  | * + <https://www.speedyservices.com/uploads/file/93ea0e1aa720457c850b734acf5be9f6/A1-Reckoner-Poster.pdf> | | |
|  | **Exposure Level below 100 Points**  If the Exposure Level derived from this assessment falls below 100 points per individual the task may commence in accordance with the risk assessment and Safe System of Work. Using an ATPMS may provide useful information about likely exposure in complex situations or where exposure level is difficult to predict but must be authorised by the Project Lead. | | **Exposure Level greater than 100 points**  If the Exposure Level is above 100 points per individual undertaking the task, the works must be re-planned with additional resources, changing the process and/or selecting alternative equipment. The task must then be reassessed using the HAV risk assessment form and the new exposure level determined. If the exposure level now falls below 100 points per individual the task may commence in accordance with the Safe System of Work. If, however the level remains above 100 points (after at least one additional iteration of the risk assessment process), a Safe System of Work must be implemented including adoption of an ATPMS to monitor exposure levels. The use of an ATPMS where vibration cannot be reduced requires authorisation by the project lead using the HAV control risk assessment. |
|  | The Site Lead should ensure that the risk control measures as defined in the Safe System of Work are implemented in full including: | | |
|  | * Use of plant/tools or work methods that avoid exposure. | | |
|  | * Adherence to trigger time exposure limits where exposure cannot be avoided. | | |
|  | * Measuring/logging trigger time exposure where appropriate as identified in the risk assessment. | | |
|  | * Training and supervision of operatives to ensure the SSOW is followed. | | |
|  | * Maintenance of the work equipment to ensure optimum working condition with all cutting edges kept sharp. | | |
|  | The Supervisor should give sufficient consideration in every Daily Activity Briefing to remind the workforce of the HAV exposure risk control measures as defined in the SSOW and to report any adverse symptoms. | | |
|  | The Safe System of Work will be reviewed when anything changes and at regular intervals thereafter in accordance with the Setting People to Work Safely procedure ([HSES-PR-0011](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8591)). | | |
|  | **ATPMS DETAILED REQUIREMENTS** | | |
|  | The company approach is to utilise an ATPMS where the vibration control risk assessment indicates exposure is likely to routinely exceed 100 points or where an occupational health assessment indicates there is a risk to health necessitating restrictions on tool usage. If there is no occupational health diagnosis, then Site Lead must only give authorisation to use an ATPMS if he or she is satisfied that all options have been exhausted to reduce vibration levels below 100 points and that all supervisors and users are trained and competent in its use. | | |
|  | The Site Lead must ensure that each named individual using the system is issued with a ‘ATPMS swipe card’ ([OPS-PR-244](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1768)) which is programmed with the person’s personal details including a unique number and the individuals permitted vibration exposure levels (as defined by this procedure / their individual HAVS Assessment). | | |
|  | The Site Lead must ensure the ATPMS data is obtained and reviewed on a regular basis to ensure that vibration exposure levels detailed within the Safe System of Work have not been exceeded. Where excursions above the exposure levels are evident the Site Lead must instigate an investigation into the causes of the breach and reassess the effectiveness of the risk control measures for the works prior to recommencement. | | |
|  | The Site Lead is responsible for ensuring and monitoring implementation of these measures and for keeping auditable site records. | | |
|  | Any individual exceeding the Exposure Limit Value of 350 points must cease using vibrating tools with immediate effect until such time as an Occupational Health Incident Investigation has been carried out in accordance with the Incident Investigation and Reporting procedure ([HSES-PR-0005](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8639)). | | |
|  | Competency, Training and Instruction | | |
|  | The Site Lead and/or person responsible for implementing this procedure must have successfully completed the following: | | |
|  | * Site Manager Safety Training Scheme (SMSTS) or company accepted equivalent. | | |
|  | * Setting People to Work Internal Training Course (in accordance with [HSES-PR-0011](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8591) Setting People to Work Safely). | | |
|  | * Hand-arm Vibration – Guide for Managers ([HSF-RM-0060a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8566)). | | |
|  | * ATMPS training where applicable. | | |
|  | All employees exposed to the risk of Hand Arm Vibration must receive the Hand-arm Vibration – Guide for Operatives ([HSF-RM-0060b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8567)), suitable information and training so they understand the hazards associated with working with hand held vibrating tools/equipment and how to use the selected controls. Briefing Attendance Records must be maintained ([HSES-SF-0011a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-7850)). | | |
|  | Individual employees will also receive specific guidance regarding trigger time limits to enable them to self-monitor their own daily exposure.  Employees will be instructed on possible symptoms of HAVS and the need to report these to line management for escalation to Occupational Health Services without delay. | | |
|  | Employees will be instructed on the correct action to be taken should it be discovered that their daily limits may be reached. | | |
|  | **OCCUPATIONAL HEALTH** | | |
|  | Anyone required to use hand held or guided vibrating tools/equipment must be engaged in a suitable health surveillance programme ([HSF-PR-0035](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1734) Occupational Health Surveillance-Assessment) before starting work where they are required to operate hand held or guided vibrating tools/equipment. | | |
|  | The purpose of health surveillance is to detect work-related ill health at an early stage and to act on the results. | | |
|  | HAVS Occupational Health Surveillance will be conducted over a three-year cycle in accordance with the Occupational Health Surveillance-Assessment procedure ([HSF-PR-0035](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1734)), except where HAVS has been diagnosed. The following occupational health surveillance guidance applies to employees diagnosed with HAVS using the Stockholm Workshop Scales: | | |
|  | * Diagnosed Stage 1 or Stage 2 Early – annual Face to Face health assessment will replace annual HAVS questionnaires. | | |
|  | * Diagnosed Stage 2 Late or Stage 3 – no further health surveillance will be required as the employee will be prohibited from using hand held vibrating tools/equipment. | | |
|  | If HAVS is diagnosed following an assessment with the Occupational Health Provider, the grading will be shared with the relevant project by the Occupational Health Partner / Admin. Team by email. | | |
|  | It is the joint mandatory responsibility of operations and the local HSE Advisor to conduct a one-to-one diagnosis meeting with the employee and to complete HAVS Investigation Form ([HSF-SF-0060a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8568)). The HAVS Investigation Form ([HSF-SF-0060a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8568)) contains guidance for use throughout the diagnosis meeting. | | |
|  | Once complete and signed by all parties, the form is to be copied to the Occupational Health Department at [BBUKOcchealth@balfourbeatty.com](mailto:BBUKOcchealth@balfourbeatty.com) for storage on the employees HR file. | | |
|  | Diagnosis of HAVS and the completed HAVS Investigation Form must also be recorded in accordance with the Incident Reporting and Investigation procedure ([HSES-PR-0005](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8639)) and recorded on iSMS. Advice should be sought from the Occupational Health Manager about the need to report under RIDDOR. | | |
|  | **SUPPLY CHAIN** | | |
|  | The requirements outlined in this procedure are also applicable to our supply chain, who must demonstrate that their own procedural controls are suitable and sufficient to protect their workforce from exposure to harmful vibration to at least the same standard, and that an appropriate health surveillance programme is in place. Supply chain employees must not be set to work unless they can supply evidence that they are fit to work or have work restrictions following an occupational health assessment. | | |
|  | The Site Lead must confirm the specific supply chain arrangements for controlling vibration at work during the Pre-Start Subcontractors Meeting ([HSES-TF-0010c](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-7997)) prior to works commencing on site. | | |
| ACRONYMS AND Definitions | | | |
| **ATPMS** | | An Auditable, Tamper Proof HAV Exposure Management System. | |
| **HAND-ARM VIBRATION (HAV)** | | Vibration transmitted from a work process into workers’ hands and arms. It can be caused by operating hand-held power tools, such as road breakers, and hand-guided equipment, such as compactor plates, or by holding materials being processed by machines. | |
| **HAND-ARM VIBRATION SYNDROME (HAVS)** | | A group of disorders which can affect the blood vessels, nerves, muscles and joints of the hand, wrist and arm. They can become severely disabling if ignored. The best-known form is vibration white finger (VWF), which can be triggered by cold or wet weather and can cause severe pain in the affected fingers. | |
| **HEALTH SURVEILLANCE** | | A program of health checks to identify early signs and symptoms of disease. | |
| **POINTS** | | The Health and Safety Executive’s defined system for the measurement of vibration exposure for an individual to allow comparison with the Exposure Action Value and the Exposure Limit Value. | |
| **STOCKHOLM WORKSHOP SCALES** | | A classification scheme to classify neurological and vascular symptoms in HAVS. | |
| **TRIGGER TIME** | | The total time the equipment is operated i.e. time the trigger is pressed. It does not include any time that the equipment is not activated, for example when the equipment is not in use or being carried to and from the area of work. | |

| INPUTS | | |
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| **Reference** | **Type** | **Title** |
| SI 2005 No. 1093 | Legislation | [Control of Vibration at Work Regulations 2005](http://www.legislation.gov.uk/uksi/2005/1093/contents/made) |
| [L140,](http://www.hse.gov.uk/pubns/books/l140.htm) 2nd Edition, 2019 | Guidance on Regulations | Hand-arm vibration. |
| [INDG 175](http://www.hse.gov.uk/pubns/indg175.pdf) (Rev 3), November 2012 | Guidance | Hand-arm vibration at work. HSE |
| [HSES-PR-0005](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8639) | Procedure | Incident Investigation and Report |
| [HSES-PR-0011](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8591) | Procedure | Setting People to Work Safely |
| [HSF-PR-0035](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1734) | Procedure | Occupational Health Surveillance/Assessment |
| [OPS-PR-244](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-1768) | Procedure | Hand-arm Vibration Monitoring Equipment |
| [HSF-RM-0060a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8566) | Reference Material | Hand-arm Vibration – Guide for Managers |
| [HSF-RM-0060b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8567) | Reference Material | Hand-arm Vibration – Guide for Operatives |

| OuTPUTS | | | |
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| **Reference No.** | **Document Title** | **Retention Period** | **Responsibility** |
| [HSES-TF-0010c](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-7997) | Pre-Start Subcontractors Meeting | 6/12 years | Site Lead |
| [HSF-SF-0060a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-8568) | HAVS Investigation | Duration of employment + 7 years | Occupational Health / iSMS |
| [HSES-SF-0011a](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-7850) | Briefing Attendance Record | Duration of the Project | Site Lead |
| [HSF-SF-0060b](https://home360.balfourbeatty.com/ghoreferencecentre/Group%20BMS/_layouts/DocIdRedir.aspx?ID=2KHUWT73P6SE-1572-14474) | Hand Arm Vibration Risk Assessment | Duration of project + 7 years | Site Lead |