

# Occupational Health (OH) in South African Construction

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## Objectives

The objectives of the study conducted among Construction Health and Safety Agents (CHSAs) registered with the South African Council for the Project and Construction Management Professions (SACPCMP) were to determine the:

- The frequency at which OH hazards are encountered;
- Perceptions of the CHSAs with respect to project occupational health (OH);
- CHSAs' project OH related practices;
- Potential of aspects / interventions to contribute to an improvement in project OH, and
- CHSAs' rating of their OH knowledge.

## Theoretical review

Construction entails a range of OH hazards in the form of biological, chemical, cold, dusts, ergonomic, heat, illumination (poor), noise, psychosocial, and vibration. Furthermore, OH in construction is a multi-stakeholder issue (Gibb, Gyi, & Thompson, 1999). With respect to this study, clients are required to, or may appoint CHSAs to fulfil their responsibilities in terms of the South African Construction Regulations (Republic of South Africa, 2014).

## Research method and sample stratum

A questionnaire survey was administered among 72 registered CHSAs per e-mail. 20 Responses were included in the analysis of the data, which equates to a 27.8% response rate.

## Results

Many of the results are presented using mean scores (MSs) between 0.00 or 1.00 (lower limit) and 5.00 (upper limit), based upon percentage responses to a five- or six-point Likert scale.

**Table 1: Importance (not to very) of addressing OH during the six stages of projects (MS = 1.00 – 5.00)**

Stage	MS	Rank
Detailed design	4.40	1
Construction documentation and management	4.40	2
Concept and feasibility	4.21	3
Tender documentation and procurement	4.10	4
Project initiation and briefing	3.95	5
Project close out	3.89	6

**Table 2: Respondents' self-rating (limited to extensive) of their knowledge with respect to aspects (MS = 1.00 – 5.00)**

Aspect	MS	Rank
Construction OH	4.00	1
OH	3.58	2
Designing for construction OH	3.50	3

**Table 3: Percentage of respondents that identified 20 / 31 aspects on projects in 2017, and the mean percentage of the projects**

Aspect	Yes	Mean
Manual tasks	100.0	70.5
Oils / Petrol (hydrocarbons)	94.7	66.7
Paints	94.7	58.7
Cement dust	94.7	75.8
Concrete dust	94.7	72.8
Labour intensive work	94.7	71.9
Noise	94.7	53.2
Vibration	94.7	46.5
Heat	90.0	52.9
Solvents	89.5	57.2
Mechanised methods (potential)	89.5	52.5
Work pressure	89.5	53.2
Bitumen	85.0	43.5
Fumes	84.2	48.8
Adhesives	84.2	44.3
Vapours	84.2	55.1
Epoxy-resins	83.3	30.0
Cold	83.3	41.9
Quartz / Silica dust	83.3	45.3
Asbestos dust	78.9	25.0

**Table 4: Percentage of projects for which respondents specified OH related assessments in 2017, and the mean percentage of the projects**

Assessment	Yes	Mean
Pre-employment medicals	85.0	97.1
Annual in-employment (periodic) medicals	84.2	92.5
Plant operator medicals	84.2	92.2
Pre-employment audiometric tests	78.9	83.0
Contract specific (client required) medicals	78.9	89.0
Exit medicals	63.2	96.7
Exit audiometric tests	61.1	91.4
Contract specific (self-initiated) medicals	52.6	63.0

**Table 5: Percentage of projects for which respondents specified OH related training in 2017, and the mean percentage of the projects**

Type	Yes	Mean
Hazard identification and risk assessment (OH)	100.0	91.3
Safe work procedures (SWPs)	100.0	85.5
Induction (that includes OH)	95.0	91.4
Toolbox talks (OH)	90.0	86.9
Daily site task instruction (DSTI) linked to OH	90.0	88.6
Dissemination of safety data sheets (per activity)	90.0	73.1
Method statements that include OH	90.0	83.5
Drug and other substance awareness	75.0	77.7
Alcohol awareness	70.0	70.0
HIV and AIDS awareness	63.2	69.2
Tuberculosis awareness	42.1	78.5

**Table 6: Extent (minor to major) to which 12 / 36 aspects / interventions could contribute to an improvement in OH (MS = 1.00 - 5.00)**

Aspect / Intervention	MS	Rank
Management commitment (Stage 5)	4.65	1
Contractor project register of OH hazards (Gen.)	4.55	2
Identification of potential OH issues (Stage 2)	4.53	3
Specification (Stage 3)	4.50	4
Design HIRA (Stage 3)	4.50	5
Contractor planning (Stages 4 & 5)	4.50	6
Safe work procedures (Stage 5)	4.50	7
Construction HIRA (Stages 4 & 5)	4.45	8
Supervisory OH training	4.45	9
Method statements (S5)	4.45	10
Worker OH training	4.40	11
Hazardous processes information	4.40	12

**Table 7: Extent (cannot, & minor to major) to which OH can be influenced during the six stages of projects (MS = 0.00 – 5.00)**

Stage	MS	Rank
Detailed design	4.21	1
Construction documentation and management	4.00	2
Concept and feasibility	3.85	3
Tender documentation and procurement	3.79	4
Project initiation and briefing	3.55	5
Project close out	2.89	6

## Conclusions and Recommendations

- OH hazards exist in construction;
- The respondents appreciate that OH can be addressed during the six stages of projects;
- OH can be influenced during the six stages of projects;
- The respondents are above average in terms of their OH knowledge;
- The respondents undertake a range of OH related interventions;
- The respondents appreciate the extent to which various aspects / interventions could contribute to an improvement in OH;
- OH is a multi-stakeholder issue;
- Tertiary built environment education should address OH;
- Designing for construction OH should be introduced and more importantly, embedded in tertiary built environment education programmes, and
- A construction industry OH standard, OH practice notes, and CPD should be evolved.

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