

TEST REPORT	
EN ISO 11148-8: 2011	
Hand-held non-electric power tools - Safety requirements	
- Part 8: Sanders and polishers	
Report reference No.	: SH12111311-001
Tested by (+ signature).....	: Heinlich Wu <i>Heinlich Wu</i>
Approved by (+ signature)	: Michael Shen <i>Michael Shen</i>
Date of issue	: Dec.20, 2012
Testing laboratory	: Intertek Testing Services Shanghai Ltd.
Address.....	: Building No.86, 1198 Qinzhou Road (North), Shanghai 200233, China
Testing location/procedure	: TL <input checked="" type="checkbox"/> RMT <input type="checkbox"/> SMT <input type="checkbox"/> WMT <input type="checkbox"/> TMP <input type="checkbox"/>
Address.....	: As above
Applicant.....	: Ningbo Steed Tools Co., Ltd
Address.....	: Fangjiada, Gulin Town, Yinzhou District, Ningbo, Zhejiang, P.R.China
Test specification:	
Standard	: EN ISO 11148-8: 2011
Test procedure	: CE-MD
Non-standard test method	: N/A
Test Report Form No	: TTRF EN ISO 11148_8A
TRF Originator	: Intertek Shanghai
Master TRF	: 2012-09
Test Item Description	
Trademark.....	: N/A
Model and/or type reference.....	: PAT-301,PAT-302,PAT-303
Manufacturer	: Same as applicant
Rating(s)	Max. air pressure: 6,3bar(90PSI) n ₀ : 10000/min, Pad size: 6"
Remark(s).....	: PAT-302 is identical with PAT-301 except for the output spindle lock method PAT-303 is identical with PAT-302 except for PAT-303 with a dust proof cover, PAT-302 without

Test case verdicts

Test case does not apply to the test object : N/A

Test item does meet the requirement..... : P(Pass)

Test item does not meet the requirement..... : F(Fail)

Testing

Date of receipt of test item : Dec.01, 2012

Date(s) of performance of test..... : Dec.01, 2012 – Dec.20, 2012

General remarks

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a comma is used as the decimal separator.

Determination of the test results includes consideration of measurement uncertainty from the test equipment and methods.

General product information:

The product covered by this report is hand-held air sander.

Remark:

This report based on report ref. no. SH10020609-001 issued on July 22, 2010

by Intertek Testing Services Shanghai Limited including following changes and/or additions:

Test standard changed from EN 792-8:2001+A1:2008 to EN ISO 11148-8: 2011.

Factory name: Ningbo Steed Tools Co., Ltd

Factory address: Fangjiada, Gulin Town, Yinzhou District, Ningbo, Zhejiang,
P.R.China

Copy of marking plate

Air sander**PAT-301****Max. air pressure: 6,3bar****Air inlet: 1/4inch****Rated speed n: 10000/min****Diameter of sanding pad:6“****Series No.: [xxxxxxxx]****BJ: 2012**

Ningbo Steed Tools Co., Ltd
Fangjiada, Gulin Town, Yinzhou District, Ningbo, Zhejiang, P.R.
China

Authorised representative in EU:

Name: [xxxx] Adresse: [xxxxxxxx]

Air sander**PAT-302****Max. air pressure: 6,3bar****Air inlet: 1/4inch****Rated speed n: 10000/min****Diameter of sanding pad:6“****Series No.: [xxxxxxxx]****BJ: 2012**

Ningbo Steed Tools Co., Ltd
Fangjiada, Gulin Town, Yinzhou District, Ningbo, Zhejiang, P.R.
China

Authorised representative in EU:

Name: [xxxx] Adresse: [xxxxxxxx]

**Air sander
PAT-303****Max. air pressure: 6,3bar****Air inlet: 1/4inch****Rated speed n: 10000/min****Diameter of sanding pad:6“****Series No.: [xxxxxxxxx]****BJ: 2012**

**Ningbo Steed Tools Co., Ltd
Fangjiada, Gulin Town, Yinzhou District, Ningbo, Zhejiang, P.R.
China**

**Authorised representative in EU:
Name: [xxxx] Adresse: [xxxxxxxxx]**

Summary of testing:

All tests are carried out according to the EN ISO 11148-8:2011 and the test results meet the requirements specified in the above-mentioned standards.

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
4	Safety requirements and/or protective measures		
4.1	General		
	The machine shall comply with the following safety requirements and/or protective measures and be verified in accordance with Clause 5. In addition, the machine shall be designed in accordance with the principles of ISO 12100 for the relevant, but not necessarily significant, hazards, which are dealt with by this part of ISO 11148.		P
4.2	Mechanical safety		
4.2.1	Surfaces, edges and corners		
	Accessible parts of the sanders and polishers, except the inserted tool, shall not have sharp edges or angles or rough or abrasive surfaces; see ISO 12100:2010, 6.2.2.1.		P
4.2.2	Supporting surface and stability		
	The sander and polisher shall be so designed that it can be laid aside and remain in a stable position on a plane surface.		P
4.2.3	Run-down time		
	The run-down time, after stop command has been given, shall be as short as possible.		P
4.2.4	Hydraulic fluid ejection		
	Hydraulic systems of the sander and polisher shall be enclosed so as to give protection from high-pressure fluid ejection.	Pneumatic	N/A
4.2.5	Speed control		
	The rated speed of a rotary or belt sander or polisher shall not be exceeded under the conditions marked on the sander or polisher. The operating speed of a rotary or belt sander shall never exceed the maximum operating speed of accessories, such as a backing pad. It shall be possible to measure rotational speed by a tachometer.	n_0 : 10000/min Measured no-load speed: 9900/min	P
	The speed control device of a rotary sander (where fitted) shall be designed to prevent incorrect assembly. The speed control device shall be manufactured of non-corrodible material.		N/A
	The maximum operating speed marked on backing pads and drums shall equal or exceed the rated speed marked on the sander or polisher.	The max. operating speed marked on sanding pad: 12000/min > 10000/min	P
4.2.6	Power tool construction		
	The sander or polisher shall be so designed and constructed as to prevent the loosening or loss of components during expected use, including rough handling and occasional dropping, which can compromise its safety functions. Verification shall be carried out in accordance with 5.5.		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
4.2.7	Distance between moving and fixed parts		
	Polishers and sanders shall be designed so as not to allow fingers to be caught between the moving and fixed parts.		P
4.2.8	Position of handles		
	The handles shall be so shaped and located as to minimize the risk of inadvertent contact of the operator's hand with the rotating abrasive tool. Recommendations are given in ISO 13854.		P
4.2.9	Guards		
	Portable belt sanding machines shall be provided with guarding on one side at the nip point where the sanding belt runs into the pulley.	Rotary sander	N/A
	The unused run of the sanding belt shall be guarded on one side and at the rear.		N/A
4.2.10	Backing pads and drums		
	Backing pads and drums for rotary sanders shall be capable of withstanding free rotational speeds of 120% of the maximum operating speed and shall be capable of withstanding the heat generated in use. The manufacturer shall ensure that the material for the pad is suitable.		P
4.3	Thermal safety		
	Surface temperatures of parts of the sander and polisher which are held during use or which can be inadvertently touched shall follow the provisions of ISO 13732-1 and ISO 13732-3. Pneumatic tools shall be designed to minimize the cooling effects of exhaust air on the handles and other gripping zones.		P
4.4	Noise reduction	See Clause 5.2	P
4.5	Vibration	See Clause 5.3	P
4.6	Materials and substances processed, used or exhausted		
4.6.1	Exhaust air or gas		
	Sanders and polishers driven with compressed air or gas shall be designed in such a way that exhaust air or gases are directed so as not to cause a hazard to the operator and so that any other effects, such as blowing the dust and reflected air or gas from the workpiece on to the operator, are minimized.		P
4.6.2	Dust and fumes		

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	So far as is reasonably practicable, the sander or polisher shall be designed to facilitate the collection and removal or suppression of airborne dust particles and fumes generated by the work process. The instruction handbook shall include sufficient information to enable adequate control of the risks from dust and fumes.		P
4.6.3	Lubricants		
	When specifying lubricants, the manufacturer shall take environmental and occupational health aspects into account.		P
4.7	Ergonomics		
4.7.1	Design of the handle		
	Gripping areas of the sanders and polishers shall be designed to provide a convenient, effective means for the operator to exercise full control over the sander or polisher.		P
	Handles and other parts used for gripping the sander or polisher shall be designed to ensure that the operator is able to grip the sander or polisher correctly and to perform the expected work. Handles shall suit the functional anatomy of the hand and the dimensions of the hands of the operator population. Further guidance on ergonomic design principles can be found in EN 614-1		P
	Sanders and polisher having a mass greater than 2 kg (including the inserted tool) shall be capable of being supported by two hands whilst being lifted or operated.	Less than 2kg	N/A
	The grip shall be such that normal feed force and reaction torque can be transmitted in an ergonomic way from the hand of the operator to the sander or polisher.		P
	The strength of a removable handle and the method of fixing it shall be appropriate to the intended principal use.	No removable handle	N/A
	The handles of belt sanders shall be so located that a barrier interrupts any straight line from the gripping surface of a handle to the nip point of a pulley.		N/A
4.7.2	Suspension device		
	Provision shall be made, where appropriate, to enable the attachment of a suspension device to the sander or polisher in order to reduce, where practicable, the physical strain placed on the operator by the weight of the sander or polisher. The fitting of a suspension device shall not introduce an additional hazard.	No suspension device used	N/A
4.8	Controls		

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
4.8.1	Start-and-stop device		
	Sanders and polishers shall be equipped with a single control device to start and/or stop them. It shall be adapted to the handle or to the part being gripped, so that it can be held comfortably in the run position, and so that the operator can activate it without releasing the grip on the handles.		P
	Start-and-stop devices shall be so designed that the inserted tool ceases to be powered when the start-and stop device is released. Without manual effort and when completely released, the device shall move to the stop position, i.e. shall be of the hold-to-run type.	Hold to run type	P
	Start-and-stop devices shall be in the stop position or immediately move to the stop position when the sander or polisher is connected to the energy supply.	In the stop position	P
	It shall not be possible to lock the start-and-stop device in the running position.	No lock in the running position	P
4.8.2	Unintentional start		
	The start-and-stop device shall be so designed, positioned or guarded that the risk of unintentional start is minimized. Verification shall be carried out according to 5.4		P
	For rotary sanders with sanding discs having a diameter of 180mm and more, the start-and-stop device shall be so designed that it requires two separate and dissimilar actions to start the sander or polisher.	Less than 180mm	N/A
4.8.3	Actuating forces		
	For sanders and polisher that are intended for frequent starts or for use with precision work, the actuating force shall be small.		P
	For sanders and polisher that are normally used in operations of long duration, the force to keep the start device in the run position should be small.		P
	For further information on trigger forces for control devices see EN 894-3:2000.		P
5	Verification		
5.1	General conditions for tests		
	Tests according to this part of ISO 11148 are type tests		P
5.2	Noise		
	The noise-emission values shall be measured and declared in accordance with ISO 15744.	L _{pA} : 89 dB(A) K _{pA} : 3 dB(A) L _{wA} : 100 dB(A) K _{wA} : 3 dB(A)	P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	Compliance with 4.4 may be verified through the comparison of the noise emission values with those for other machines of the same family or with machines of similar size and performance characteristics.		P
5.3	Vibration		
	The vibration total value shall be measured and reported in accordance with ISO 28927-3.	5,52m/s ² K= 1,5 m/s ²	P
	The vibration-emission value and its uncertainty shall be declared in accordance with EN 12096.		P
	Compliance with 4.5 may be verified through the comparison of the vibration emission values with those for other machines of the same family or with machines of similar size and performance characteristics.		P
5.4	Unintentional start		
	Compliance with 4.8.2 shall be verified as follows.		
	The sander or polisher shall be connected to the energy supply and placed and maintained in any possible position and pulled over the horizontal plane by its hose.		P
	Continuous operation of the start-and-stop device shall not occur.		P
	Additionally, those sanders and polishers for which lock-off start-and-stop devices are required for start-up shall be checked by visual inspection to verify that the device is present and effective.		N/A
5.5	Power tool construction		
	Compliance with 4.2.6 shall be verified by dropping a sample sander or polisher three times onto a concrete surface from a height of 1 m without affecting its operational and safety functions. The sample shall be positioned so as to vary the point of impact.		P
5.6	Structure of verification		
	Table 1 — Structure of verification	Satisfy the table 1	P
6	Information for use		
6.1	Marking, signs and written warnings		
	Sanders and polishers shall be marked visibly, legibly and indelibly with the following information	See copy of marking plate	
	name and full address of the manufacturer and, where applicable, his/her authorized representative		P
	designation of series or type		P
	serial number or batch number;		P
	year of construction, that is the year in which the manufacturing process is completed;		P
	rated speed, in revolutions per minute		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	for pneumatic sanders and polishers: the rated air pressure marked as (max.)		P
	for hydraulic sanders and polishers: the nominal pressure and flow the maximum allowable setting for the pressure relief valve		N/A
	Sanders and polishers shall be permanently marked with a graphical symbol in accordance with Annex C showing that the operator's instructions shall be read before work starts.		P
6.2	Instruction handbook		
6.2.1	General		
	For the information to be provided to the user, the content of Clause 6 together with ISO 12100:2010, 6.4.5.2 and 6.4.5.3, apply.		P
	The information provided by the manufacturer is an important but not exclusive basis for the safe use of the tool. It shall provide sufficient information for the end user to perform an initial risk assessment.		P
	The hazards identified in 6.2.2.4 to 6.2.2.13 are foreseeable in the general use of hand-held sanders and polishers. The information provided with the tool shall state that the user or the user's employer shall assess the specific risks that can be present as a result of each use.		P
	The instruction handbook shall contain information relating to at least the following:		P
	name and address of the manufacturer or supplier or any other agent responsible for placing the sander or polisher on the market;		P
	designation of the series or type;		P
	operating instructions; see 6.3;		P
	information on noise emission; see 6.4.2;		P
	information on vibration transmitted to the hands of the operator; see 6.4.3		P
	maintenance instructions; see 6.5		P
	explanations of any symbols marked on the sander or polisher; see Annex C;		P
	information about residual risks and how to control them		P
6.2.2	Operator's instructions		
6.2.2.1	General		
	The instructions and warnings stated in 6.2.2 to 6.2.4 shall be given with all sanders and polishers unless the risk assessment shows that they are not relevant to a particular sander or polisher. Words of equivalent meaning may be used.		P
6.2.2.2	Statement of use		

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	The operator's instructions shall include a description of the correct use of the sander or polisher and shall make reference to the appropriate inserted tools. The operator's instructions shall state that any other use is forbidden. Foreseeable misuse of the sander or polisher, which experience has shown to occur, shall be warned against.		P
6.2.2.3	Allowance for user		
	The operator's instructions shall be written primarily for professional users. Where a sander or polisher may be used by nonprofessional users, additional information for use shall be provided		P
6.2.2.4	General safety rules		
	For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the sander or polisher. Failure to do so can result in serious bodily injury.		P
	Only qualified and trained operators should install, adjust or use the sander or polisher.		P
	Do not modify this sander or polisher. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator.		P
	Do not discard the safety instructions; give them to the operator.		P
	Do not use a sander or polisher if the tool has been damaged.		P
	Tools shall be inspected periodically to verify that the ratings and markings required by this part of ISO 11148 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.		P
6.2.2.5	Projectile hazards		
	Be aware that failure of the workpiece or accessories, or even of the inserted tool itself can generate high-velocity projectiles.		P
	Always wear impact-resistant eye protection during the operation of the sander or polisher. The grade of protection required should be assessed for each use.		P
	For overhead work, wear a safety helmet.		P
	The risks to others should also be assessed at this time.		P
	Ensure that the workpiece is securely fixed.		P
6.2.2.6	Entanglement hazards		
	Choking, scalping and/or lacerations can occur if loose clothing, personal jewellery, neck wear, hair or gloves are not kept away from the tool and its accessories.		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
6.2.2.7	Operating hazards		
	- Use of the tool can expose the operator's hands to hazards, including cuts and abrasions and heat. Wear suitable gloves to protect hands.		P
	- Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.		P
	- Hold the tool correctly; be ready to counteract normal or sudden movements and have both hands available.		P
	- Maintain a balanced body position and secure footing		P
	- Release the start-and-stop device in the case of an interruption of the energy supply.		P
	- Use only lubricants recommended by the manufacturer		P
	- Personal protective safety glasses shall be used; suitable gloves and protective clothing are recommended.		P
	- Inspect the backing pad before each use. Do not use if cracked or broken or if it has been dropped.		P
	- Avoid direct contact with the moving sanding pad in order to prevent pinching or cutting of hands or other body parts. Wear suitable gloves to protect hands.		P
	- Never run the tool unless abrasive is applied to the workpiece.		P
	- There is a risk of electrostatic discharge if used on plastic and other non-conductive materials.		P
	- Potentially explosive atmospheres can be caused by dust and fumes resulting from sanding or grinding. Always use dust extraction or suppression systems which are suitable for the material being processed.		P
6.2.2.8	Repetitive motions hazards		
	- When using a sander or polisher to perform work-related activities, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.		P
	- While using a sander or polisher, the operator should adopt a comfortable posture whilst maintaining secure footing and avoiding awkward or off-balanced postures. The operator should change posture during extended tasks, which can help avoid discomfort and fatigue		P
	- If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.		P
6.2.2.9	Accessory hazards		

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	- Disconnect the sander or polisher from the energy supply before changing the inserted tool or accessory.		P
	- Avoid direct contact with the inserted tool during and after use, as it can be hot or sharp.		P
	- Use only sizes and types of accessories and consumables that are recommended by the sanders or polishers; do not use other types or sizes of accessories or consumables.		P
	- Grinding wheels and cutting-off tools shall not be used.		P
	- Check that the maximum operating speed of the inserted tool (flap wheels, abrasive belts, fibre discs, backing pads, etc.), is higher than the rated speed of the sander or polisher.		P
	- Self-fixing sander disc shall be placed concentrically on the supporting pad.		P
6.2.2.10	Workplace hazards		
	- Slips, trips and falls are major causes of workplace injury. Be aware of slippery surfaces caused by use of the tool and also of trip hazards caused by the air line or hydraulic hose.		P
	- The sander or polisher is not intended for use in potentially explosive atmospheres and is not insulated against contact with electric power.		P
	- Ensure that there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.		P
6.2.2.11	Dust and fume hazards		
	- Dust and fumes generated when using sanders and polishers can cause ill health (for example, cancer, birth defects, asthma and/or dermatitis); risk assessment and implementation of appropriate controls for these hazards are essential.		P
	- Risk assessment should include dust created by the use of the tool and the potential for disturbing existing dust.		P
	- Operate and maintain the sander or polisher as recommended in these instructions, to minimize dust or fume emissions.		P
	- Direct the exhaust so as to minimize disturbance of dust in a dust-filled environment		P
	- Where dust or fumes are created, the priority shall be to control them at the point of emission		P
	- All integral features or accessories for the collection, extraction or suppression of airborne dust or fumes should be correctly used and maintained in accordance with the manufacturer's instructions.		P
	- Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in dust or fumes.		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	- Use respiratory protection in accordance with employer's instructions and as required by occupational health and safety regulations.		P
6.2.2.12	Noise hazards		
	– Exposure to high noise levels can cause permanent, disabling, hearing loss and other problems, such as tinnitus (ringing, buzzing, whistling or humming in the ears). Therefore, risk assessment and implementation of appropriate controls for these hazards are essential		P
	- Appropriate controls to reduce the risk can include actions such as damping materials to prevent workpieces from “ringing”.		P
	- Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.		P
	- Operate and maintain the sander or polisher as recommended in the instruction handbook, to prevent an unnecessary increase in the noise level.		P
	- Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise		P
	- If the sander or polisher has a silencer, always ensure it is in place and in good working order when the tool is being operated.		N/A
6.2.2.13	Vibration hazards		
	The information for use shall draw attention to vibration hazards that have not been eliminated by design and construction and remain as residual vibration risks. It shall enable employers to identify the circumstances in which the operator is likely to be at risk from vibration exposure. If the vibration emission value obtained using ISO 28927-3 does not adequately represent the vibration emission in the intended uses (and foreseeable misuses) of the machine, additional information and/or warning shall be supplied to enable the risks arising from vibration to be assessed and managed.		P
	- Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms		P
	- Wear warm clothing when working in cold conditions and keep your hands warm and dry.		P
	- If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the sander or polisher, tell your employer and consult a physician.		P
	- Operate and maintain the sander or polisher as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	- Hold the tool with a light but safe grip, taking account of the required hand reaction forces, because the risk from vibration is generally greater when the grip force is higher.		P
6.2.3	Additional safety instructions for pneumatic power tools		
	Air under pressure can cause severe injury:		P
	- Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs;		P
	- Never direct air at yourself or anyone else.		P
	- Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings		P
	- Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whipcheck safety cables shall be used to safeguard against possible hose-to-tool and hose-and-hose connection failure.		P
	- Do not exceed the maximum air pressure stated on the tool.		P
	- Never carry an air tool by the hose.		P
6.2.4	Additional safety instructions for hydraulic power tools		
	- Do not exceed the maximum relief-valve setting stated on the tool		N/A
	- Carry out a daily check for damaged or worn hoses or hydraulic connections and replace if necessary		N/A
	- Use only clean oil and filling equipment		N/A
	- Power units require a free flow of air for cooling purposes and should, therefore, be positioned in a well-ventilated area free from hazardous fumes.		N/A
	- Ensure that couplings are clean and correctly engaged before operation		N/A
	- Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury		N/A
	- Do not install or remove the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury		N/A
	- Be sure all hose connections are tight.		N/A
	- Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.		N/A
	Instructions shall be given that only hydraulic fluid recommended by the manufacturer shall be used.		N/A
6.2.5	Specific safety instructions		
	Warnings shall be given about any specific or unusual hazards associated with the use of the sander or polisher. Such warnings shall indicate the nature of the hazard, the risk of injury and the avoidance action to take.		P

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
6.3	Operating instructions		
	The instructions shall include, where appropriate		P
	- instructions for setting up or fixing the sander or polisher in a stable position appropriate for sanders and polisher that can be mounted in a support		P
	- assembly instructions, including recommended guards, accessories and inserted tools		P
	- an illustrated description of functions;		P
	- limitation on tool use due to environmental conditions		P
	- instructions for setting and testing		P
	- general instructions for use, including changing inserted tools and limits on the size and type of workpiece		P
	- instructions stating that a sander or polisher shall not be operated at a speed exceeding the rated speed.		P
6.4	Data		
6.4.1	General		
	The instructions shall include the information on the data plate and the following		P
	- mass of the sander or polisher;		P
	- for hydraulic sanders and polishers:		N/A
	- specification of the coupling;		N/A
	- specification of hoses with regard to pressure and flow;		N/A
	- maximum inlet temperature of the inlet fluid.		N/A
6.4.2	Noise		
6.4.2.1	Declaration of emission		
	The instructions shall include a noise-emission declaration in accordance with ISO 15744.		P
6.4.2.2	Additional information		
	If the values for noise emissions obtained using the appropriate tests defined in 5.2 do not adequately represent the emissions during the intended uses of the machine, additional information and/or warnings shall be supplied to enable an assessment and the management of the associated risks.		N/A
	Information on noise emission should also be provided in the sales literature.		P
6.4.3	Vibration		
6.4.3.1	Declaration of emission		

EN ISO 11148-8:2011			
Clause	Requirement - Test	Result - Remark	Verdict
	The instructions shall include the vibration-emission value and uncertainty as specified in 5.3 and the reference number of the test code in accordance with ISO 28927-3.		P
6.4.3.2	Additional information		
	If the vibration-emission values obtained using the appropriate tests defined in 5.3 do not adequately represent the emissions during the intended uses of the machine, additional information and/or warnings shall be supplied to enable an assessment and the management of the associated risks.		N/A
	Information on vibration emission should also be provided in the sales literature.		P
6.5	Maintenance instructions		
	The maintenance instructions shall contain		P
	- instructions to keep the sanders and polishers safe by regular preventative maintenance;		P
	- information on when the regular preventative maintenance shall be carried out, for instance after a specified time of operation, a specified number of cycles/operations or a stated number of times per year;		P
	- instructions for disposal so as not to expose personnel and the environment to hazards;		P
	- a list of the service operations that the user should carry out;		P
	- instructions for lubrication, if required;		P
	- instructions to check the speed and make a simple check of the vibration level after each service;		P
	- instructions to check the speed regularly, and		P
	- the specifications of the spare parts for use when these affect the health and safety of operators.		P
	Maintenance instructions shall include the precautions to be taken in order to avoid exposure to hazardous substances deposited (due to work processes) on the tool.		P
Annex A	List of significant hazards		
Annex B	Examples of sanders and polishers covered by this part of ISO 11148		
Annex C	Symbols for labels and signs		
Annex D	Examples of abrasive products for use with polishers and sanders		