**Requirement Specification – Knee Pads**

1. **Requirements**

**1.1. Description of the Knee Pads**

The Danish Defence has a need for Knee Pads. The Knee Pads are part of the Danish soldier’s personal equipment and are worn outside the combat pant or the rain pant. The knee pads must be designed in a way that they stay in place on the knee when the soldier is crawling on knees, running or doing similar activities. The Knee Pads issued today has a widely used design with a foam pad with two straps sewn in to one side and a protective shell on the front. The Knee Pads are used for protecting the wearer’s knees when he or she is kneeling down, crawling or similar. The Knee Pads are used in many different environments including urban, desert and forest. The Knee Pads will be used by conscripts and professional soldiers, men and women for both training and actual military operations. The Knee Pads are expected to withstand tough daily use for minimum one year and shall have the quality and durability in materials and craftsmanship to accomplish this.

**1.1.1. Relations to other material**

The Knee Pads will primarily interface with the heavy and light Danish Defence combat uniform pants and the combat uniform waterproof and breathable rain pant, but can also be used with other types of legwear and even with shorts next to skin. All pants are made from different fabrics and they do not have arrangements for holding knee pads in place.

**1.2. Description and definitions**

The requirement specification, cf. section 1.4, describes all the requirements for the acquisition and consists of six columns with the following information:

|  |  |
| --- | --- |
| "#" | ID number |
| "Requirement" | Requirement description |
| "Classification" | The classification of the requirement as further described in section 1.3 |
| "DALO remarks" | Further information regarding the requirement |
| "Requirement compliance" | The tenderer's indication of compliance (YES or NO) |
| "Tenderer’s description" | Requirements regarding the tenderer's compliance description |

**1.3. Classification**

Some requirements are mandatory requirements (SHALL) and shall be fulfilled by the tenderer. If just one of the mandatory requirements is not fulfilled, the tenderer's offer will not be taken into further consideration. Other requirements are evaluation requirements (should) and should be fulfilled by the tenderer. DALO will evaluate the offered Knee Pads according to the evaluation requirements.

**1.4. Requirement and response sheet**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **#** | **Requirement** | **Classification** | **DALO remarks** | **To be filled out by the tenderer** | | |
| **Requirement compliance**  **(tick a box)** | | **Tenderer's description** |
| **YES** | **NO** |
| **1** | **Colour**  The Knee Pads shall be in a MultiCam compatible colour, not compromising camouflage. | SHALL | By this requirement, DALO mean that the overall impression of the Knee Pad shall be tan, sand, crocodile, green or similar colour tones or a combination.  DALO do not consider black a MultiCam compatible colour. However small parts like the buckles, logo or similar small details can be black, as long as it is not interfering with the overall visual impression. |  |  |  |
| **2** | **Strap I**  The Knee Pads shall have an adjustable **non** elastic strap that, when the kneepad is worn, sits above the calf and below the knee. | SHALL |  |  |  |  |
| **3** | **Strap II**  The non elastic strap shall be long enough to fit a person with a leg circumference above the calf and below the knee of up to 50 cm. | SHALL |  |  |  |  |
| **4** | **Strap III**  The Knee Pads shall have an adjustable elastic strap that, when the kneepad is worn, sits above the knee. | SHALL |  |  |  |  |
| **5** | **Strap IV**  Both straps shall be easily detachable in one side of the Knee Pad. | SHALL | By easily detachable DALO mean that they should be fastened with a lock mechanism that is fast and easy to operate with gloves on. This can be by means of a slide in buckle or similar as seen on many knee pad models from well known brands. |  |  |  |
| **6** | **Main Fastening Mechanism**  The **main** fastening mechanism shall **not** be hook and loop closure. | SHALL | It is DALO experience that hook and loop closure easily gets filled with grass, mud or similar, making the closure unusable until it is cleaned. The Knee Pad can have a hook and loop closure for e.g. avoiding a strap to swing and bounce, but the **main** fastening mechanism shall not be hook and loop closure. |  |  |  |
| **7** | **Protective Shell**  The Knee Pad shall have a flexible protective hard shell of 12-20 cm height x 14 – 17 cm width. | SHALL | The protective hard shell provides a level of abrasion and penetration resistance. It can be made of different materials like rubber or plastic and shall be flexible to provide comfort and fit to the user. The width is understood as the measurement on the widest point of the protective shell. The height is understood as the longest vertical measurement of the protective shell. |  |  |  |
| **8** | **NIR reflectance**  The Knee Pad shall have a light reflectance of maximum 50 % in the near infrared (NIR) spectra 700 nm to 1000 nm. | SHALL | By this requirement, DALO mean that the main parts of the Knee Pad for example the protective shell and retaining straps shall have a NIR reflectance of maximum 50%. However small parts like the buckles, logo or similar small details can have a higher reflectance. |  |  |  |
| **9** | **Functionality**  The Knee Pad should function well. | Should | DALO will grade the Knee Pads based on the experienced functionality. The functionality partly depends on the offered Knee Pad’s relations to other materials. Please refer to 1.1.1 for a description of relating materials. Factors such as experienced level of protection, ability to stay in place, traction, skid resistance, comfort, freedom of movement, adjustability, moisture management and other practical and tactical factors influence the functionality. |  |  |  |
| **10** | **Lower Limit Functionality**  The Knee Pads shall at least obtain a weighted average grade of 3.00 in the evaluation of requirement 9 Functionality. | SHALL | It is critical to DALO that the Knee Pads are able to function well and without complications during operative tasks. To ensure an acceptable level of functionality DALO only accept offers with an average grade of 3.00 or more from the evaluation of requirement 9 Functionality.  If the average grade for requirement 9 Functionality is lower than 3.00 the offer does not fulfil this mandatory requirement and is consequently unconditional. |  |  |  |
| **11** | **Durability**  The durability of the Knee Pad should be to best industry standard. | Should | DALO will grade the Knee Pads based on the experienced durability. Durability includes factors such as ability to withstand severe use, construction, build quality, workmanship and choice of materials. The SME panel will conduct tests to simulate heavy use. |  |  |  |
| **12** | **Lower Limit Durability**  The Knee Pads shall at least obtain a weighted average grade of 3.00 in the evaluation of requirement 11 Durability. | SHALL | It is critical to DALO that the Knee Pads are able to withstand the severe wear and tear that is expected from daily use in operative tasks. To ensure an acceptable level of durability DALO only accept offers with an average grade of 3.00 or more from the evaluation of requirement 11 Durability.  If the average grade for requirement 11 Durability is lower than 3.00 the offer does not fulfil this mandatory requirement and is consequently unconditional. |  |  |  |
| **13** | **Terms of Delivery**  The terms of delivery shall be INCOTERMS 2010 FCA. | SHALL |  |  |  |  |
| **14** | **Order Delivery Time**  The tenderer shall be able to fulfill an order within 100 calendar days from order placement. | SHALL |  |  |  |  |

**1.5. Evaluation**DALO will test and evaluate the offered Knee Pads and grade them according to the evaluation requirements. The evaluation will be carried out by a Subject Matter Expert (SME) panel in relevant field tests and by a visual examination of the Knee Pads. The offered Knee Pads will be graded 1 – 5 for each evaluation requirement on the following general scale.

|  |  |
| --- | --- |
| Grade | Meaning |
| 5 | Excellent performance |
| 4 | Good performance |
| 3 | Average performance |
| 2 | Low Performance |
| 1 | Very low or no performance |

Descriptions of the grades are general indications and apply to the requirements as appropriate. Grades may be given as decimal numbers in cases where the performance of a tender for a given requirement is assessed to fall between two of the grades.

**1.5.1. Weightings**

All conditional tenders are evaluated on the two criterias quality and price (60%/40%). The quality criterion consists of the two evaluation (should) requirements, #9 and #10, which are weighted as follows.

#9 Functionality – 75%

#10 Durability – 25%

The offer with the highest overall score wins the tender.