

N2 Bordo Laterale

# CORTEN CLASSE N2 BORDO LATERALE W2



**NUOVA VERSIONE**  
CON RIVESTIMENTO IN LEGNO



|                             |                                |
|-----------------------------|--------------------------------|
| ACCIAIO                     | CORTEN B tipo S355J2W          |
| CERTIFICAZIONE              | CE                             |
| LARGHEZZA DI FUNZIONAMENTO  | W2                             |
| ALTEZZA FUORI TERRA         | 75 cm                          |
| PROFONDITÀ DI INFISSIONE    | 805 mm                         |
| INGOMBRO TRASVERSALE        | 20,3 cm                        |
| INTERASSE PALI              | 400 cm                         |
| ESTENSIONE BARRIERA TESTATA | 72 ml terminali inclusi        |
| DIMENSIONI PALO             | C125 x 62,5 x 25 x 4 x 1500 mm |



*Installation Manual*

*Manuale di installazione*

**passco L1 NEO**  
**N2/H1-A-W2/W3 (ES 4.00)**



**PASS+CO®**

**PASS+CO INTERNATIONAL GMBH**

GRUBE NEUE HAARDT 8

57076 SIEGEN

DEUTSCHLAND

[WWW.PASSCO.INTERNATIONAL](http://WWW.PASSCO.INTERNATIONAL)

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**metalwood.it**



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**1. Sommario**

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| <b>2. General Information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>2. Informazioni generali</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p><i>The Road Restraint System (RRS) is designed for installation on road traffic areas.</i></p> <p><i>It is intended to protect occupants of errant vehicles on the roadway, to protect third parties and objects and can be installed in medians and side lanes as well as on verges.</i></p> <p><i>The construction product has been fully tested according to EN 1317. The test results have been reached by the conditions mentioned in the test report.</i></p> <p><i>There was no parts &gt; 2 kg that detached from the RRS when crash testing according to EN 1317.</i></p> <p><i>The construction product is CE certified. The CE-certification is available at the manufacturer.</i></p> <p><i>The construction product does not contain toxic substances nor is subject to control of such kind.</i></p> <p><i>The RRS is without any dangerous parts.</i></p> <p><i>The crash test does not register proof of use in restricted conditions.</i></p> <p><i>A-profile and B-profile beams can be installed equivalent.</i></p> | <p>Il Sistema di Ritenuta Stradale è progettato per l'installazione su aree di traffico stradale.</p> <p>Viene creato al fine di proteggere le persone a bordo di veicoli circolanti, nonché per proteggere terze parti e oggetti. Può essere installato sia ai lati che al centro delle corsie e ai margini della carreggiata.</p> <p>Il prodotto costruito è stato pienamente testato secondo gli accordi EN 1317. I risultati di tali test sono stati raggiunti seguendo le condizioni menzionate nei rapporti di prova (crash test).</p> <p>Come da norma EN 1317 non c'erano parti &gt; 2 kg che si sono distaccate dal Sistema di Ritenuta Stradale quando il crash test è stato svolto.</p> <p>Il prodotto costruito è certificato CE. La certificazione CE può essere richiesta al produttore.</p> <p>Il prodotto costruito non contiene alcuna sostanza tossica né tracce di esse.</p> <p>Il Sistema di Ritenuta Stradale non contiene parti pericolose.</p> <p>Il crash test non registra prova d'usura in condizioni limitate.</p> <p>L'utilizzo di nastri orizzontali con profilo A o B è equivalente.</p> |

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| <b>2.1 General Information for installation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>2.1 Informazioni generali per l'installazione</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p><i>The installation shall be done by trained and qualified personnel only. Installation companies obtain a copy of the installation manual by the holder of the test reports.</i></p> <p><i>Personal protective clothing must be used when installing the RRS.</i></p> <p><i>The defects liability switches from manufacturer to installer, if any changes to the specified installation requirements are made, without approval of the manufacturer</i></p>                                                                                                                                                                                                                                                                                                                            | <p><i>L'installazione deve essere fatta unicamente da personale preparato e qualificato. Le aziende ottengono una copia del manuale di installazione dal proprietario dei rapporti di prova.</i></p> <p>Bisogna utilizzare abbigliamento protettivo quando si installano i Sistemi di Sicurezza Stradale.</p> <p>La responsabilità per vizi passa dal produttore all'installatore se viene fatto qualsiasi cambiamento sulle specifiche di installazione, avvenute senza l'approvazione del produttore.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>2.2 Transport and storing</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>2.2 Trasporto e deposito</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p><i>All RRS parts are to be handled and stocked professionally.</i></p> <p><i>Storage and handling has to comply to manufacturer requirements, e.g. process and instructions of transport and stocking. RRS parts are to be protected against dirt, corrosion and damage. RRS parts on-site for installation have to be installed immediately.</i></p> <p><i>There should only be material at short worksite areas (on the road, in medians or on roadsides) that will be installed within the duration of provided worksite safety.</i></p> <p><i>During delivery of the RRS parts, personal protective clothing must be used according to European regulations. When delivering the RRS parts to stock or site by truck, the load must be secured and prevented from slipping.</i></p> | <p>Tutte le parti del Sistema di Ritenuta Stradale devono essere gestite e depositate professionalmente.</p> <p>Deposito e gestione devono soddisfare i requisiti del produttore es.: procedimento di installazione, istruzioni di trasporto e deposito. Le parti dei Sistemi di Ritenuta Stradale devono essere protette da sporco, corrosione e altri danni. Le parti sul cantiere e pronte all'installazione devono essere installate immediatamente.</p> <p>I materiali presenti sul cantiere (sulla carreggiata, nella striscia centrale o lati della strada) verranno installati garantendo la sicurezza del cantiere.</p> <p>Durante la spedizione dei componenti dei Sistemi di Ritenuta Stradale deve essere utilizzato vestiario protettivo come richiesto dalla regolamentazione Europea. Quando vengono spediti tramite camion i componenti destinati a magazzini o cantieri, il carico/scarico deve essere realizzato in sicurezza e in modo tale da prevenire eventuali cadute.</p> |



| <b>3. Foundation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>3. Fondazione</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <p><i>The RRS was tested in soil condition 3 according to regulation DIN 18300 VOB/C.</i></p> <p><i>The areas in front and under RRS are to be installed for enough load capacity (for a car).</i></p> <p><i>Posts are driven into the soil by pneumatic or hydraulic piling machine with corresponding hammering tools for the post in question. Pneumatic piling hammer should have energy of 6 bar and minimum 420 Nm.</i></p> <p><i>Hydraulic piling machines should have a pressure of minimum 70 bar.</i></p> <p><i>Before starting piling works, the area should be checked for cables, pipes or other underground objects. When driving the post into the ground, the post should not deform, especially not at contact part to the piling tool.</i></p> <p><i>The posts are to be installed vertical with a maximum deviation of +/- 10%.</i></p> <p><i>Shortening of the posts and special adjustments are only permitted with written approval of the customer.</i></p> | <p>I Sistemi di Ritenuta Stradali sono stati testati in classi di terreno 3 secondo la regolamentazione DIN 18300 VOB/C.</p> <p>Le aree in cui vengono installati i Sistemi di Ritenuta Stradale devono rispettare una determinata capacità di carico (per un'auto).</p> <p>I pali sono infissi nel suolo con appositi strumenti di palificazione idraulica o pneumatica. Il martello pneumatico deve essere a energia d'urto 6 bar e minimo 420Nm.</p> <p>Il battipalo deve avere una pressione di minimo 70 bar.</p> <p>Prima dell'inizio dei lavori di infissione bisogna ottenere informazioni sul sottosuolo (presenza cavi, tubi o altri oggetti). Quando i pali vengono infissi nel terreno non devono essere deformati.</p> <p>I pali devono essere infissi verticalmente con una massima deviazione di +/- 10 %.</p> <p>Modifiche o eventuali aggiustamenti sono permessi salvo previa approvazione scritta del cliente.</p> |
| <b>4. System assembly</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>4. Sistema di assemblaggio</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><i>Before assembling the system on site, the necessary work zone safety requirements are to be implemented.</i></p> <p><i>The following tools are required:</i></p> <ul style="list-style-type: none"> <li>– <i>Piling machine</i></li> <li>– <i>Tool to pull post</i></li> <li>– <i>Drill until 23 mm with drill bits</i></li> <li>– <i>Level</i></li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Prima di iniziare i lavori di assemblaggio è necessario che il cantiere rispetti i requisiti di sicurezza sul lavoro.</p> <p>Per il montaggio saranno necessari:</p> <ul style="list-style-type: none"> <li>– Battipalo</li> <li>– Estrattore</li> <li>– Trapano da 23 mm con punte</li> <li>– Livellatrice</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

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| <ul style="list-style-type: none"> <li>– Sledgehammer</li> <li>– Torque key to 140 Nm with sockets</li> <li>– Etc.</li> </ul> <p><i>The RRS does not include any pre-mounted parts and is not installed preloaded.</i></p> <p><i>Beams have to overlap in the direction of traffic.</i></p> <p><i>Posts have to be installed with the closed section in direction of traffic.</i></p> <p><i>In principle, the distance between the posts is not to be exceeded. If the worksite conditions do not allow a regular installation of the post distance, the post spacing may be reduced.</i></p> <p><i>Tolerances for installation can be seen in the relevant drawings (available at manufacturer).</i></p> <p><i>The height of the system is 75 cm +/- 3 cm referring to the road surface or top of curb. The distance from the system to the road surface shall be 50 cm.</i></p> <p><i>Curbs with height more than 10,00 cm are to be avoided. If the curbs are higher than that (up to 20 cm), and they cannot be dismantled, an agreement must be found with the customer. If possible, the front of the beam should be in line with the curb of the surface.</i></p> <p><i>In curved road sections of more than radius &lt; 30 m, pre-bended radius beams must be used. Radius beams are available in 2,5 m graduation.</i></p> <p><i>Beams can be cut to fit on site (cut pieces). The following conditions need to be taken into consideration:</i></p> | <ul style="list-style-type: none"> <li>– Martello</li> <li>– Chiave dinamometrica da 140 Nm con prese</li> <li>– Etc.</li> </ul> <p>I Sistemi di Ritenuta Stradale non contengono componenti precedentemente installati o usati.</p> <p>I nastri orizzontali devono sovrapporsi nella direzione di marcia.</p> <p>I pali devono essere montati con il lato chiuso parallelo al senso di marcia.</p> <p>Principalmente, la distanza tra un palo e l'altro non dev'essere superata. Se le caratteristiche strutturali non ne consentono la spaziatura regolare, l'interasse del palo può essere accorciata.</p> <p>Tolleranze riguardo l'installazione vengono riportate sui disegni (disponibili presso il produttore).</p> <p>L'altezza d'installazione del sistema è di 75 cm +/- 3 rispetto al bordo superiore della carreggiata. Di norma la distanza tra il bordo anteriore del sistema e il bordo stradale dev'essere di 50 cm.</p> <p>Cordoli con un'altezza superiore a 10 cm devono essere evitati. Se questi fossero superiori a tale altezza e vi sia l'impossibilità di ridurli, dev'essere trovato un accordo con il cliente. Se possibile il sistema dovrebbe essere sistemato in modo che il bordo anteriore del nastro sia a filo col bordo anteriore del cordolo.</p> <p>Nelle curve con raggio &lt; 30 m devono essere utilizzati nastri calandrati. Sono disponibili nastri calandrati con raggio fino a 2,5m.</p> <p>I nastri in alternativa possono essere modificati sul cantiere (tagliati). Durante ciò devono essere rispettate le seguenti condizioni:</p> |
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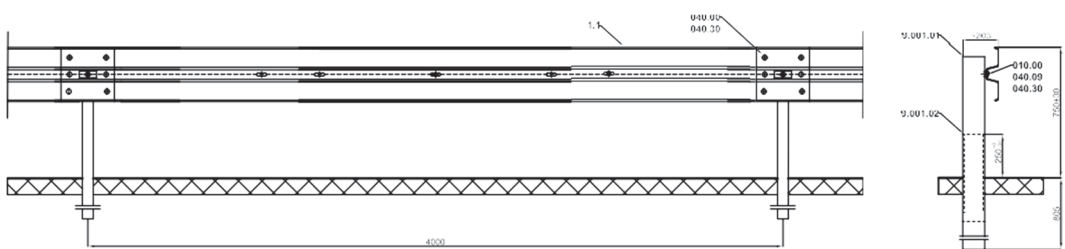
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| <ul style="list-style-type: none"> <li>– <i>Minimum length 750 mm</i></li> <li>– <i>The post distance of the system must not be exceeded</i></li> <li>– <i>Professional cuts using angle grinder or saw</i></li> <li>– <i>Professional drilling for bolt holes</i></li> <li>– <i>Professional maintenance of cuts and drilled holes using zinc spray overlay material.</i></li> </ul> <p><i>The system can also be used on embankments. On falling embankments with a slope of more than 1:20, extended posts must be used in relation to the extent of the slope.</i></p> <p><i>Flaring of the system is possible, if structural situations demand it.</i></p> <p><i>Details and special adjustments have to be arranged with the customer.</i></p> | <ul style="list-style-type: none"> <li>– Lunghezza minima 750 mm</li> <li>– Non superare l'interasse dei pali che viene specificata dal Sistema di Ritenuta Stradale</li> <li>– I tagli professionali devono essere effettuati utilizzando smerigliatrice o sega</li> <li>– Foratura professionale per i fori di bulloni e viti</li> <li>– Ritocco professionale di interfacce e fori mediante l'utilizzo di materiale di rivestimento in polvere di zinco.</li> </ul> <p>Il sistema può essere realizzato anche su argini in pendenza. Nel caso di argini con una pendenza superiore a 1:20, devono essere utilizzati pali più lunghi, a seconda dell'inclinazione del pendio.</p> <p>Dove il cantiere lo permette è possibile sviare i terminali verso l'esterno della carreggiata.</p> <p>Dettagli e misure speciali devono essere accordati col cliente.</p> |
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| <b>4.1 Fasteners</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>4.1 Elementi di fissaggio</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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| <p><i>Nuts must fit manually and be tightened with torque wrench tools (minimum 70 Nm).</i></p> <p><i>All fixtures must be fitted vertically to the connecting parts. The nose tip of the bolts at joint connections of the beam must be fitted at drop hole. In principle, only galvanized fasteners are to be used.</i></p> <p><i>The grade 4.6 and 8.8 are not be changed. Fasteners that have been mounted once, are not allowed to be used again.</i></p> | <p>I dadi devono essere serrati a mano e poi con chiave dinamometrica (minimo 70 Nm).</p> <p>Tutti i fissaggi devono essere eseguiti verticalmente.</p> <p>Il bullone dev'essere infilato nel foro e deve appoggiare sulla parte esterna del nastro. In particolare, vanno utilizzati solo bulloni zincati a caldo.</p> <p>Le classi di resistenza 4.6 e 8.8 non devono essere cambiate. Gli elementi di fissaggio che vengono montati una volta non possono essere utilizzati nuovamente.</p> |

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| <b>4.2 End terminals and Transitions</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>4.2 Terminali e transizioni</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><i>The RRS was tested with 12 meters sloped down end terminal. Other end terminals can be connected to the RRS in correspondence with the customer and the manufacturer. In principle, it is recommended to use tested end terminals.</i></p> <p><i>We recommend to use qualified transitions where necessary. These can be for example transitions according to specifications of NF058.</i></p> <p><i>Specific information can be requested from the manufacturer.</i></p> | <p>Il Sistema si Ritenuta Stradale è stato testato con un abbassamento di 12 metri. Gli altri terminali possono essere collegati previo accordo tra cliente e produttore. Principalmente, si raccomanda di utilizzare terminali testati.</p> <p>Dove necessario, raccomandiamo l'uso di transizioni qualificate NF058. Queste possono essere per esempio transizioni in accordo con le specifiche di NF058.</p> <p>Informazioni specifiche possono essere richieste dal produttore.</p>  |
| <b>5. Durability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>5. Durabilità</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <p><i>The minimum coating thickness for fasteners at respective measuring points must be 40 µm in accordance with EN ISO 10684.</i></p> <p><i>Galvanising of bolts and steel is made according to EN ISO 1461, EN 10346 and 1179.</i></p> <p><i>Depending on the atmospheric corrosion, a durability of 20 years can be expected.</i></p> <p><i>Further information is available by the manufacturer declaration according to CPR 305/2011.</i></p>                             | <p>Lo spessore minimo per gli elementi di fissaggio nei rispettivi punti di misurazione deve essere di 40 µm secondo quanto specificato in EN ISO 10684.</p> <p>La zincatura dei bulloni d'acciaio è realizzata secondo quanto stabilito da EN ISO 1461, EN 10346 e 1179.</p> <p>La durabilità dei sistemi è solitamente di 20 anni, ma dipende dalla condizione atmosferica.</p> <p>Maggiori informazioni sono disponibili nella dichiarazione del produttore secondo CPR 305/2011.</p> |

| <b>6. Repair work</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>6. Riparazioni</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p><i>In principle, only those components that have residual (plastic) deformation need to be replaced.</i></p> <p><i>If there are merely minor deformations of components, replacement is not necessary.</i></p> <p><i>If posts are damaged, they need to be replaced.</i></p> <p><i>If straightening the system is not possible, and if more than one component is damaged, the damaged parts of the system must be replaced completely but modular in 4-meter sections. All dismantled fasteners must be replaced with new ones.</i></p> <p><i>Galvanised surfaces shall not be damaged. Minor defective spots of the galvanised surfaces must be threatened with application of zinc dust coating.</i></p> <p><i>Any professional contractor can easily undertake repair work.</i></p> | <p>Principalmente, tutti i componenti del sistema che presentano permanenti deformazioni devono essere sostituiti.</p> <p>Se invece sui componenti sono presenti minime deformazioni la sostituzione non è necessaria.<br/>Se i pali sono danneggiati devono essere sostituiti.</p> <p>Se raddrizzare il sistema non è possibile e se c'è più di una componente danneggiata, le parti danneggiate devono essere completamente sostituite con moduli da sezioni di 4 metri. Tutti gli elementi di fissaggio smontati devono essere sostituiti da nuovi elementi.<br/>È importante evitare danni alle superfici zincate. Piccoli difetti sulle superfici zincate devono essere trattati con polvere di zinco.</p> <p>Ogni installatore professionale può facilmente intraprendere lavori di riparazione.</p> |
| <b>7. Recycling</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>7. Riciclo</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <p><i>All damaged parts can be recycled according to legal and local waste disposal regulations.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p>Tutte le parti danneggiate possono essere riciclate in accordo con le regolamentazioni legali e locali riguardanti il riciclo.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>8. Inspection and Maintenance</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>8. Ispezione e mantenimento</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p><i>The system is maintenance free. If possible, a visual check should be made annually.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p>Il sistema non necessita di manutenzione. Se possibile può essere effettuato un controllo visivo annuale</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| <b>9. Further Information</b>                                                                                                                                                                                                                                                                          | <b>9. Informazioni aggiuntive</b>                                                                                                                                                                                                                                                                            |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| <b>9.1 Approved Modifications</b>                                                                                                                                                                                                                                                                      | <b>9.1 Modifiche approvate</b>                                                                                                                                                                                                                                                                               |
| <p><i>Approved modifications are mentioned on the relevant CE-certification.</i></p>                                                                                                                                                                                                                   | <p>Le modifiche approvate vengono menzionate nella certificazione CE.</p>                                                                                                                                                                                                                                    |
| <b>9.2 Additional safety devices</b>                                                                                                                                                                                                                                                                   | <b>9.2 Aggiunta sistemi di sicurezza</b>                                                                                                                                                                                                                                                                     |
| <p><i>The customer must plan the installation of additional safety devices and get information by the manufacturer.</i></p>                                                                                                                                                                            | <p>Il cliente può pianificare l'installazione di dispositivi di sicurezza aggiuntivi e chiedere informazioni al produttore</p>                                                                                                                                                                               |

| 10. Data sheet                                                                                |          | 10. Scheda dati                                                                                        |          |                                           |
|-----------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------|----------|-------------------------------------------|
| <div></div> |          |                                                                                                        |          |                                           |
| Descrizione del sistema<br><i>System description</i>                                          |          | Passco L1 NEO N2/H1-A-W2/W3 (ES 4.00)                                                                  |          |                                           |
| Prova iniziale<br><i>Initial Type Testing</i>                                                 |          | TB11                                                                                                   | TB51     | TB42                                      |
|                                                                                               |          | 2018                                                                                                   | 2023     | 2121                                      |
| Caratteristiche materiali del sistema<br><i>Characteristic material of system</i>             |          | S355JR                                                                                                 |          |                                           |
| Larghezza del sistema [m]<br><i>Construction width</i>                                        |          | Profil B                                                                                               | Profil A |                                           |
|                                                                                               |          | 0,203                                                                                                  | 0,208    |                                           |
| Altezza del sistema [m]<br><i>Construction height</i>                                         |          | 0,75                                                                                                   |          |                                           |
| Lunghezza degli elementi del sistema [m]<br><i>Length of system elements</i>                  |          | 4,00                                                                                                   |          |                                           |
| Distanza dei pali<br><i>Post distance</i>                                                     |          | 4,00                                                                                                   |          |                                           |
| Peso per ml di lunghezza del sistema [kg/m]<br><i>Weight per meter</i>                        |          | Profil B                                                                                               | Profil A |                                           |
|                                                                                               |          | 13,7                                                                                                   | 14,2     |                                           |
| Lunghezza del test [m]<br><i>Tested length</i>                                                |          | 48                                                                                                     |          |                                           |
| Fondazione del sistema testato<br><i>Tested system foundation</i>                             |          | Infissione<br><i>Rammed</i>                                                                            |          |                                           |
| Osservazioni<br><i>Remarks</i>                                                                |          | A-and B-Profile beams to be used equivalent<br>I nastri orizzontali di profilo A e B sono equivalenti. |          |                                           |
| Larghezza d lavoro normalizzata [m]<br><i>Normalised working width</i>                        |          | 0,61 (W1)                                                                                              | 0,8 (W2) | 1,0 (W3)                                  |
| Intrusione veicolo normalizzata $V_{IN}$ [m]<br><i>Normalised vehicle intrusion</i>           |          | -                                                                                                      | -        | 1,2 (VI4)                                 |
| Deflessione $D_N$ [m]<br><i>Normalised dyn. deflection</i>                                    |          | 0,5                                                                                                    | 0,7      | 0,9                                       |
| Livello di contenimento<br><i>Containment level</i>                                           |          | Larghezza di lavoro<br><i>Working width</i>                                                            |          | Severità d'urto<br><i>Impact severity</i> |
| L1                                                                                            | N2<br>H1 | W2<br>W3                                                                                               |          | A                                         |



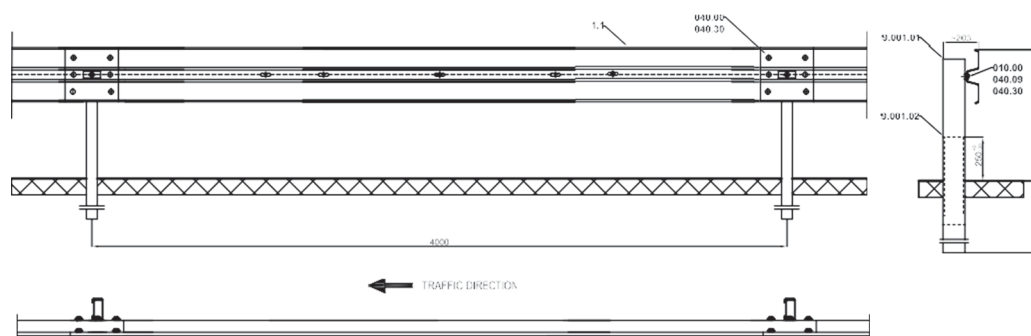
**11. Assembly instructions**

**11. Istruzioni di montaggio**

# Assembly instructions

## Istruzioni di montaggio

### passco L1 NEO ES 4.00



| Parte n.. | Qtà./<br>4 m | Denominazione                                                                          | Dimensioni         | Materiale/<br>Qualità | Norma                    | Disegno     |
|-----------|--------------|----------------------------------------------------------------------------------------|--------------------|-----------------------|--------------------------|-------------|
| 1.1       | 1            | <b>passco Beam Profile B</b><br>Nastro passco profilo B                                | 310x2,5x4300       | S355JR                | EN 10025<br>/<br>EN 1461 | X9.0-11-100 |
| 9.001.01  | 1            | <b>passco NEO Post C125</b><br>Pali passco NEO C125                                    | 125x62,5x25x4x1500 | S355JR                | EN 10025<br>/<br>EN 1461 | X9.0-11-100 |
| 9.001.02  | 1            | <b>passco NEO reinforcementPost U110</b><br>Palo di rinforzo passco NEO U110           | 110x47,5x5x500     | S355JR                | EN 10025<br>/<br>EN 1461 | X9.0-11-100 |
| 010.00    | 1            | <b>Deck plate M16</b><br>Piastrina M16                                                 | 115x40x5           | S235JR                | EN 10025<br>/<br>EN 1461 | X9.0-11-100 |
| 040.09    | 1            | <b>HRK-bolt with nose, M16x45, 8.8 with nut</b><br>Bullone HRK, M16x45<br>8.8 con dado | 16x45              | 8.8                   | ISO 4032                 | X9.0-11-100 |
| 040.00    | 6            | <b>HRK-bolt with nose, M16x27, 4.6 with nut</b><br>Bullone HRK, M16x27, 4.6 con dado   | 16x27              | 4.6                   | ISO 4032                 | X9.0-11-100 |
| 040.30    | 7            | Washer 18 mm<br>Rondella 18 mm                                                         | 30x3               | S235JR                | ISO 7091                 | X9.0-11-100 |

# Montagetafel

## *Assembly instructions*

### passco L1 NEO ES 4.00

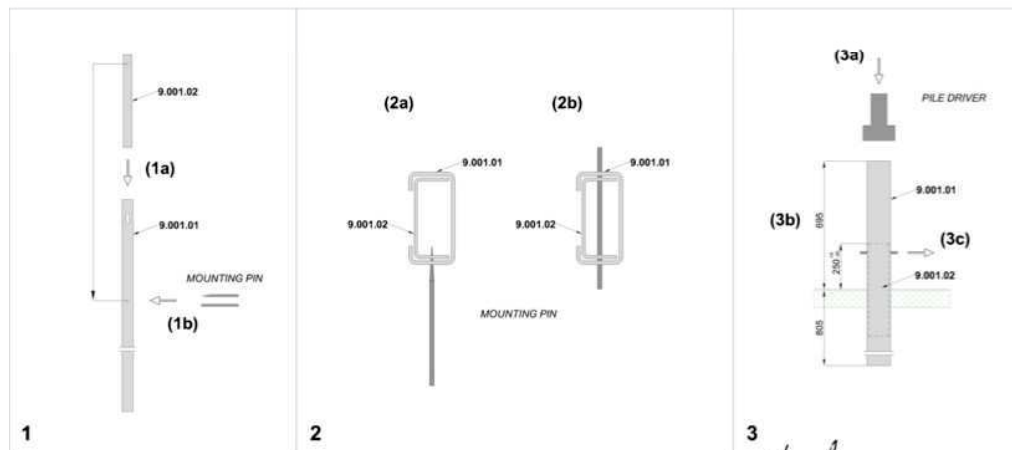
#### Post:

From post to road edge distance 0,5 m. System height:  $H = 750 \text{ mm} \pm 30 \text{ mm}$ . Post distance: 4,00 m

Post with closed site against traffic direction. Attach reinforcement post with mounting pin. Follow steps (1) to (3c) in drawing below. Post rammed in ground 805 mm.

#### Installation of beam:

1 x screw M16x45 to connect with post with nut and M16 butt plate. Overlapping with M16x27 to connect beams. Overlapping in direction of traffic. Torque min. 70 Nm, adopted 90 Nm.



*Helmut*  
**PASS+CO**

# Assembly instructions

## *Istruzioni di Montaggio*

### passco L1 NEO ES 4.00

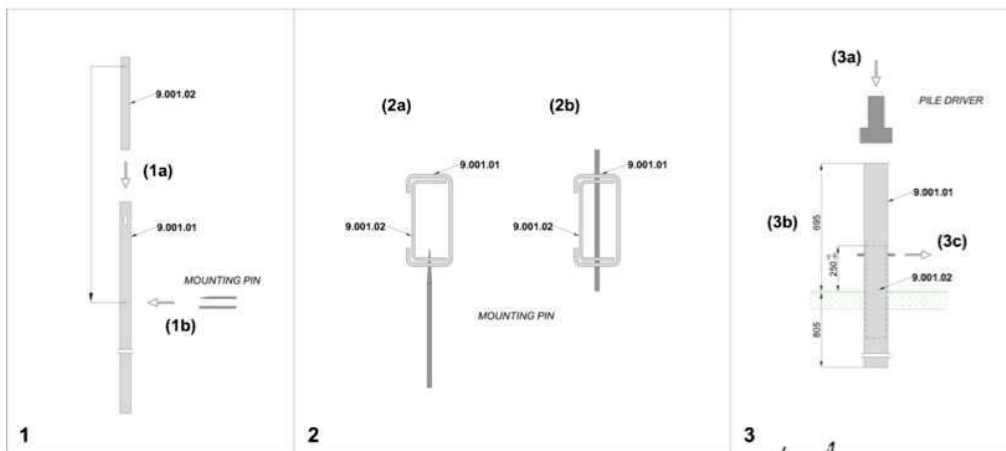
#### Pali:

La distanza dal palo al bordo della strada è di 0,5 m. Altezza del sistema:  $H = 750 \text{ mm} \pm 30 \text{ mm}$ .  
Interasse pali: 4,00 m.

I pali devono essere disposti con il lato chiuso in direzione del traffico. Una volta inseriti bloccare i pali di rinforzo con il perno di montaggio. Seguire da passo (1) a (3C) i disegni sotto riportati. I pali sono infissi nel terreno 805 mm.

#### Installazione dei nastri:

Per collegare il palo ai nastri usare il bullone M16x45 con dado e piastrina M16. Sovrapporre i nastri in direzione del traffico usando i bulloni M16X27. Serrare i bulloni a 90 Nm e comunque non meno di 70 Nm,



*H. Schumacher*  
**PASS+CO**





## Declaration of Performance

Product type Nr. VRS L1-NEO-N2-ES-4.00

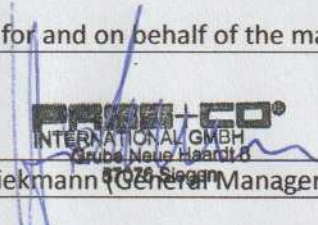
according to Construction Products Regulation Nr. 305/2011

|                                                                    |                                                                                                                                                   |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification code:                                               | <b>passco L1 NEO N2-A-W2 (ES 4.00)</b>                                                                                                            |
| Serial number:                                                     | <b>passco L1 NEO (ES 4.00)</b>                                                                                                                    |
| Intended use:                                                      | The Vehicle Restraint System<br><b>passco L1 NEO N2-A-W2 (ES 4.00)</b> is a roadside safety barrier with normal containment to be used on verges. |
| Placed on the Market by:                                           | PASS+CO INTERNATIONAL GmbH<br>Grube Neue Haardt 8<br>57076 Siegen/Germany                                                                         |
| Manufacturer of parts/elements:                                    | Lindem SP z o.o.<br>Ul. Partyzantów 4<br>42-300 Myszkow/Poland                                                                                    |
| System of assessment and verification of constancy of performance: | System 1                                                                                                                                          |
| Harmonized Standard:                                               | EN 1317-5:2007+A2:2012 + AC:2012                                                                                                                  |
| Notified Body:                                                     | TZUS Prag<br>Prosecká 811/76a<br>190 00 Prag 9 – Prosek, CZ                                                                                       |
| EU Identification number:                                          | 1020                                                                                                                                              |
| Ref. No. of Certificate of Constancy of Performance:               | 1020-CPR-090-050927                                                                                                                               |

|                                   |                                                                                                                                                                                                      |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Declared performance:             |                                                                                                                                                                                                      |
| <u>Essential characteristics</u>  | <u>Performance</u>                                                                                                                                                                                   |
| Containment level:                | N2                                                                                                                                                                                                   |
| Impact severity:                  | A                                                                                                                                                                                                    |
| Normalised working width N2:      | $W_N = 0,8 \text{ m (W2)}$                                                                                                                                                                           |
| Normalised dynamic deflection N2: | $D_N = 0,7 \text{ m}$                                                                                                                                                                                |
| Normalised vehicle intrusion      | NPD                                                                                                                                                                                                  |
| Resistance to snow removal:       | NPD                                                                                                                                                                                                  |
| Durability:                       | S 355 JR galvanized acc. to EN ISO 1461.<br>The expected working life span of the VRS is 25 years.<br>The real life span, however, depends on parameters on which the manufacturer has no influence. |
| Assembly conditions:              | 1.) The assembly must follow the assembly manual of PASS+CO INTERNATIONAL GmbH.<br>2.) Only completely installed VRS may be put into operation.                                                      |

The manufacturer hereby declares that the performance of product No. VRS passco L1 NEO N2-A-W2 (ES 4.00) is in conformity with the declared performance in this declaration.

Signed for and on behalf of the manufacturer by:

|                                                                                                                                                                     |                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <br><b>PASS+CO®</b><br>INTERNATIONAL GMBH<br>Grube Neue Haardt 8<br>57076 Siegen | Wilnsdorf, 20.02.2021<br>(place and date of issue) |
| J. M. Hiekmann (General Manager)                                                                                                                                    |                                                    |

|                                                                                                                                                                                 |                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Codice identificativo:                                                                                                                                                          | <b>passco L1 NEO N2-A-W2 (ES 4.00)</b>                                                                                                                                                        |
| Numero seriale:                                                                                                                                                                 | <b>passco L1 NEO (ES 4.00)</b>                                                                                                                                                                |
| Uso previsto:                                                                                                                                                                   | Il Sistema di ritenuta del veicolo (SRV) <b>passco L1 NEO N2-A-W2 (ES 4.00)</b> è una barriera di sicurezza stradale ad alto contenimento da utilizzare su calcestruzzo.                      |
| Produttore:                                                                                                                                                                     | PASS+CO INTERNATIONAL GmbH<br>Grube Neue Haardt 8<br>57076 Siegen<br>Germania                                                                                                                 |
| Produttore di parti/elementi:                                                                                                                                                   | Lindem SP. zo.o.<br>Ul. Partyzantów 4<br>42-300 Myszkow<br>Polonia                                                                                                                            |
| Sistema di assestamento e verifica di costanza della prestazione:                                                                                                               | Sistema 1                                                                                                                                                                                     |
| Standard armonizzato:                                                                                                                                                           | EN 1317-5:2007 + A2:2012 + AC:2012                                                                                                                                                            |
| Corpo notificato:                                                                                                                                                               | TZUS Praga<br>Proseckà 811/76a<br>190 00 Praga 9-Prosek, CZ                                                                                                                                   |
| Numero d'identificazione UE:                                                                                                                                                    | 1020                                                                                                                                                                                          |
| Rif. del certificato di costanza della prestazione:                                                                                                                             | 1020-CPR-090-050927                                                                                                                                                                           |
| Prestazione dichiarata:                                                                                                                                                         |                                                                                                                                                                                               |
| <u>Caratteristiche essenziali</u>                                                                                                                                               | <u>Prestazione</u>                                                                                                                                                                            |
| Livello di contenimento:                                                                                                                                                        | N2                                                                                                                                                                                            |
| Severità d'urto:                                                                                                                                                                | A                                                                                                                                                                                             |
| Larghezza di lavoro normalizzata N2:                                                                                                                                            | $W_n=0,8$ m (W2)                                                                                                                                                                              |
| Deflessione N2:                                                                                                                                                                 | $D_n=0,7$ m                                                                                                                                                                                   |
| Intrusione veicolo normalizzata:                                                                                                                                                | NPD                                                                                                                                                                                           |
| Resistenza rimozione neve:                                                                                                                                                      | NPD                                                                                                                                                                                           |
| Durabilità:                                                                                                                                                                     | S 355 JR, zincato secondo EN ISO 1461.<br>L'aspettativa di durabilità di VRS è di 25 anni.<br>La vera durabilità dipende, comunque da parametri su cui il produttore non ha alcuna influenza. |
| Condizioni di assemblaggio:                                                                                                                                                     | 1.) L'assemblaggio deve seguire il Manuale d'installazione PASS+CO INTERNATIONAL GmbH.<br>2.) Solo VRS completamente installati possono essere messi in funzione.                             |
| Con la presente, il produttore dichiara che la prestazione del prodotto No. VRS passco L1 NEO N2-A-W2 (ES 4.00) è conforme alle prestazioni dichiarate in questa dichiarazione. |                                                                                                                                                                                               |
| Firma per e per conto del produttore da:                                                                                                                                        |                                                                                                                                                                                               |
|                                                                                                                                                                                 |                                                                                                                                                                                               |
|                                                                                                                                                                                 | Wilnsdorf, 20.02.2021                                                                                                                                                                         |
| J.M. Hiekman (General Manager)                                                                                                                                                  | (Luogo e data emissione)                                                                                                                                                                      |





® **TECHNICKÝ A ZKUŠEBNÍ ÚSTAV STAVEBNÍ PRAHA, s.p.**  
**Technical and Test Institute for Construction Prague, SOE**

Akreditované zkušební laboratoře, Autorizovaná osoba, Notifikovaná osoba, Oznámený subjekt, Subjekt pro technické posuzování, Certifikační orgány, Inspekční orgán / Accredited Testing Laboratories, Authorized Body, Notified Body, Technical Assessment Body, Certification Bodies, Inspection Body • Prosecká 811/76a, Prosek, 190 00 Praha 9, Czech Republic

Notified Body 1020

## **CERTIFICATE OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-050927

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

### **ROAD RESTRAINT SYSTEM**

variant: steel safety barrier one-sided

#### **Passco L1 NEO N2-A-W2 (ES 4.00)**

|                              |         |
|------------------------------|---------|
| Level of restraint           | N2      |
| Impact intensity             | A       |
| Normalised working width     | W2      |
| Normalised vehicle intrusion | NPD     |
| Snow removal                 | class 3 |

**An integral part of this certificate is annex where is specified modifications of road restraint system Passco L1 NEO N2-A-W2 (ES 4.00)**

placed on the market under the name or trade mark of

#### **PASS+CO INTERNATIONAL GmbH**

Identification No.: DE811750759

Address: Grube Neue Haardt 8, 57076 Siegen, Germany

and produced in the manufacturing plant

Code format PL1

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

#### **EN 1317-5:2007+A2:2012/AC:2012**

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

**constancy of performance of the construction product.**

This certificate was first issued on 12.02.2021 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020  
Prague, 25 November 2021



  
Martin Pešek  
Deputy Manager of the Notified Body

## Annex to certificate No. 1020 – CPR – 090-050927

**List of modification system Passco L1 NEO N2-A-W2 (ES 4.00)**Modification 1: Equivalent usage of Profile A and Profile B

An equivalent usage of side beam "Passco A-Profile material thickness 2,5 mm steel grade S355JR" and side beam "Passco B-Profile material thickness 2,5 mm steel grade S355JR" is possible for the above-mentioned product.

Modification 2: Exchange of components

The geometrically equivalent side beams A/B Profiles (according to drawing RAL-RG 620 L1.1-101 and L1.1-102 respectively, dated 03/2010) are with the corresponding "Passco A/B-Profiles" (according to drawing passco 2.1.4 and passco 2.1.1 respectively, dated 13.12.2011) interchangeable.

Modification 3: Equivalence of unalloyed structural steel S355JR and weather resistant structural steel COR-TEN B S355J2W/J0WP

The mechanical properties of the weather resistant structural steel hardly differ from similar unalloyed structural steels. Equivalent usage of unalloyed structural steel S355JR and weather resistant structural steel COR-TEN B S355J2W/J0WP is possible for the above-mentioned product.

Modification 4: Possible use of band galvanizing

The replacement of zinc coating applied on pieces through galvanizing according EN ISO 1461, with band galvanizing according to EN 10346 is possible for side beam A-Profile (RAL Part-No. 001.00) and B-Profile (RAL Part-No. 002.00) and for side beam "Passco A-Profile" and "Passco B-Profile" (material thickness 2.5 mm steel grade S355JR) for the current experience period from long-term studies by the BAST (status April 2011: 9 years). This is valid to continuously hot-dip coated steel band corrosion protection systems with zinc (Z) (according to EN 10346-S250GD + 2600 NAC) and with zinc-aluminum (ZA) (according to EN 10346-S250GD and 24300 and 24600-NAC").

Modification 5: Exchange with AF beam

Based on the GDTech report (PASS+CO/009) an equivalent usage of beam switch from L1-profile to French AF A-profile beam is possible for the above-mentioned product.

**List of additional assessment of Passco L1 NEO N2-A-W2 (ES 4.00)**

Based on the GDTech report CD/2021/PASSCO/005 has been assessed snow removal. According EN 1317-5:2007+A2:2012/AC:2012 annex C is snow removal Class 3 valid only with using of following guardrail in system:

- drawing no. 9.0-11-100
- drawing no. 9.0-11-200

The stamp of the Notified Body 1020  
Prague, 25 November 2021



  
Martin Pešek  
Deputy Manager of the Notified Body





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**Technical and Test Institute for Construction Prague, SOE**

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Notified Body 1020

## **CERTIFICATE OF CONSTANCY OF PERFORMANCE**

No. 1020 – CPR – 090-050928

In compliance with Regulation 305/2011/EU of the European Parliament and of the Council of 9 March 2011 (the Construction Products Regulation or CPR), this certificate applies to the construction product:

### **ROAD RESTRAINT SYSTEM**

variant: steel safety barrier one-sided

#### **Passco L1 NEO H1-A-W3 (ES 4.00)**

|                              |         |
|------------------------------|---------|
| Level of restraint           | H1      |
| Impact intensity             | A       |
| Normalised working width     | W3      |
| Normalised vehicle intrusion | VI4     |
| Snow removal                 | class 3 |

**An integral part of this certificate is annex where is specified modifications of road restraint system Passco L1 NEO H1-A-W3 (ES 4.00)**

placed on the market under the name or trade mark of

#### **PASS+CO INTERNATIONAL GmbH**

Identification No.: DE811750759

Address: Grube Neue Haardt 8, 57076 Siegen, Germany

and produced in the manufacturing plant

Code format PL1

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

#### **EN 1317-5:2007+A2:2012/AC:2012**

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

**constancy of performance of the construction product.**

This certificate was first issued on 12.02.2021 and will remain valid as long as neither the harmonised standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

The stamp of the Notified Body 1020  
Prague, 25 November 2021



  
Martin Pešek  
Deputy Manager of the Notified Body

## Annex to certificate No. 1020 – CPR – 090-050928

**List of modification system Passco L1 NEO H1-A-W3 (ES 4.00)**Modification 1: Equivalent usage of Profile A and Profile B

An equivalent usage of side beam "Passco A-Profile material thickness 2,5 mm steel grade S355JR" and side beam "Passco B-Profile material thickness 2,5 mm steel grade S355JR" is possible for the above-mentioned product.

Modification 2: Exchange of components

The geometrically equivalent side beams A/B Profiles (according to drawing RAL-RG 620 L1.1-101 and L1.1-102 respectively, dated 03/2010) are with the corresponding "Passco A/B-Profiles" (according to drawing passco 2.1.4 and passco 2.1.1 respectively, dated 13.12.2011) interchangeable.

Modification 3: Equivalence of unalloyed structural steel S355JR and weather resistant structural steel COR-TEN B S355J2W/J0WP

The mechanical properties of the weather resistant structural steel hardly differ from similar unalloyed structural steels. Equivalent usage of unalloyed structural steel S355JR and weather resistant structural steel COR-TEN B S355J2W/J0WP is possible for the above-mentioned product.

Modification 4: Possible use of band galvanizing

The replacement of zinc coating applied on pieces through galvanizing according EN ISO 1461, with band galvanizing according to EN 10346 is possible for side beam A-Profile (RAL Part-No. 001.00) and B-Profile (RAL Part-No. 002.00) and for side beam "Passco A-Profile" and "Passco B-Profile" (material thickness 2.5 mm steel grade S355JR) for the current experience period from long-term studies by the BAST (status April 2011: 9 years). This is valid to continuously hot-dip coated steel band corrosion protection systems with zinc (Z) (according to EN 10346-S250GD + 2600 NAC) and with zinc-aluminum (ZA) (according to EN 10346-"S250GD and 24300 and 24600-NAC").

Modification 5: Exchange with AF beam

Based on the GDTech report (PASS+CO/009) an equivalent usage of beam switch from L1-profile to French AF A-profile beam is possible for the above-mentioned product.

**List of additional assessment of Passco L1 NEO H1-A-W3 (ES 4.00)**

Based on the GDTech report CD/2021/PASSCO/005 has been assessed snow removal. According EN 1317-5:2007+A2:2012/AC:2012 annex C is snow removal Class 3 valid only with using of following guardrail in system:

- drawing no. 9.0-11-100
- drawing no. 9.0-11-200

The stamp of the Notified Body 1020  
Prague, 25 November 2021



  
Martin Pešek  
Deputy Manager of the Notified Body