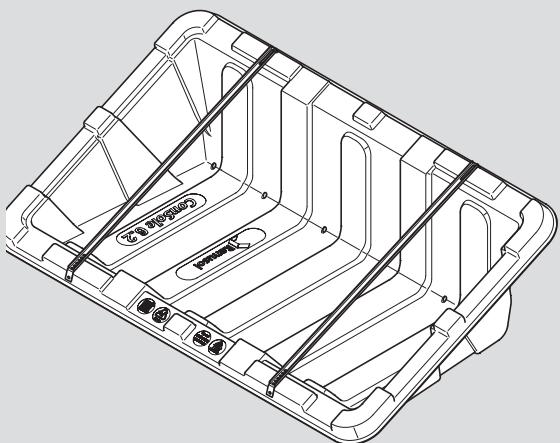
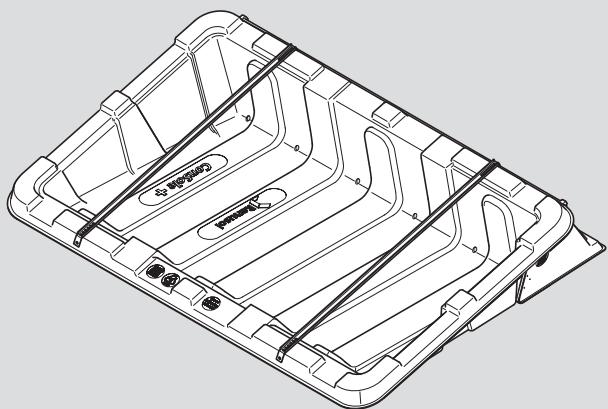


ConSole, ConSole+

DE | Installationsanleitung
GB | Installation Instructions
FR | Notice d'installation
IT | Manuale di installazione
ES | Manual de instalación
NL | Installatiehandleiding



**520041-K / 520042-K
520052-K / 520062-K**



520075-K

DE | Lesen Sie diese Installationsanleitung vor Montagebeginn!
Montage nur durch sachkundige, qualifizierte Personen!

GB | Read these instructions before installation!
Installation should only be carried out by skilled, qualified personnel!

FR | Prenez soin de lire le présent manuel d'installation avant le début du montage !
Montage seulement par des personnes compétentes et qualifiées !

IT | Leggere le presenti istruzioni di installazione prima di intraprendere i lavori di montaggio!
Il montaggio è consentito esclusivamente a personale esperto e qualificato!

ES | Lea estas instrucciones de instalación antes de comenzar el montaje!
El montaje solo debe realizarlo personal experto y cualificado!

NL | Lees deze installatiehandleiding alvorens met de montage te beginnen!
De montage mag uitsluitend plaatsvinden door deskundige, gekwalificeerde personen!



DE | Allgemeine Hinweise

Montagesystem für die Installation von PV-Modulen auf Flachdächern mit einer Dachneigung von bis zu 5° ohne Dachdurchdringung.

Die ConSole wird mit Ballast (Kies, Gehwegplatten etc.) beschwert, um den Windlasten zu widerstehen. Das erforderliche Gewicht des Ballastes ist von der Höhe des Gebäudes, seiner Lage und der Beschaffenheit des Untergrundes sowie von den Windlasten abhängig.

Richtwerte für den erforderlichen Ballast lassen sich nach **Eurocode 1 (EN 1991)** berechnen.

Die ConSole kann bei Umgebungstemperaturen von -30 °C bis +50 °C gelagert und eingesetzt werden.

Für die Montage muss die Dachfläche frei von Schnee, Eis und Schmutz sein.

Berücksichtigen Sie bei der Montage die gültigen Regelwerke, den Stand der Technik und die aktuellen Arbeitsschutzrichtlinien, insbesondere bei Arbeiten auf dem Dach.

Prüfung/Zertifizierung:

TÜV 8011005400

Das Brandverhalten des Materials der ConSole wurde nach DIN EN ISO 11925-2:2011-02 geprüft und nach DIN EN 13501-1:2010-01 in die Klasse „E“ eingeordnet.

Ermittlung der Druck- und Sogbeiwerte:

Die Sog- und Druckbeiwerte sind in Windkanalversuchen ermittelt worden. Diese können auf Anfrage von der Renusol GmbH zur Verfügung gestellt werden.

Gewährleistung:

Die Garantie von Renusol gilt nur bei Verwendung des original ConSole Komplettsystems und Einhaltung der Garantiebedingungen. Für die gesetzliche Mängelhaftung/Gewährleistung beachten Sie bitte die Allgemeinen Geschäftsbedingungen von Renusol.

Durch Transport und Verpackung können elastische Verformungen an ConSole und Streamliner entstehen. Die Funktion wird dadurch nicht beeinträchtigt.

Den aktuellsten Stand der Montageanleitung finden Sie unter:
www.renusol.com



GB | General guidelines

Mounting system for installing solar modules on flat roofs with a pitch of up to 5° without penetrating the roof.

The ConSole is weighed down with ballast (gravel, paving slabs etc.) in order to resist wind loads. The required weight of the ballast depends on the height of the building, its location and the condition of the installation surface in addition to the magnitude of the wind loads.

Guideline values for the necessary ballast can be calculated using **Eurocode 1 (EN 1991)**.

The ConSole can be stored and used at ambient temperatures of between -30 °C and +50 °C.

The roof area must be free of snow, ice and dirt during installation.

Be sure to observe the relevant regulations, latest technology standards and current health and safety guidelines during installation and, in particular, while working on the roof.

Testing/certification:

TÜV 8011005400

ConSole materials have been tested for fire behaviour in accordance with DIN EN ISO 11925-2:2011-02 and categorised as class "E" in accordance with DIN EN 13501-1:2010-01.

Calculation of the pressure and suction coefficients:

The pressure and suction coefficients are calculated on the basis of wind tunnel tests and are available from Renusol GmbH on request.

Warranty:

The Renusol warranty only applies if an original ConSole complete system is used and the warranty terms and conditions are met. For implied defects liability/warranty please refer to the Renusol General Terms and Conditions.

The ConSole and Streamliner may become elastically deformed as a result of transportation and packaging; this will not impair the performance.

The current version of these installation instructions is available at:
www.renusol.com



FR | Recommendations générales

Système de montage pour l'installation de modules photovoltaïques sur des toitures plates d'une inclinaison maximale de 5° sans les percer.

Le système ConSole doit être alourdi au moyen de lest (gravier, dalles de ciment, etc.) afin de pouvoir faire face aux charges dues au vent. Le poids de lest nécessaire dépend de la hauteur du bâtiment, de sa situation et de la constitution du support ainsi que des charges dues au vent.

Des valeurs indicatives pour le lest nécessaire peuvent également être calculées sur la base de **l'Eurocode 1 (EN 1991)**.

Le système ConSole peut être logé et mis en place à des températures ambiantes de -30 °C à +50 °C.

Lors du montage, la surface de toit doit être exempte de neige, de glace et de sales-tés.

Tenez compte lors du montage des corpus de règles en vigueur, de l'état de la technique et des directives actuelles portant sur la sécurité et la santé au travail, notamment lors de travaux effectués sur le toit.

Essai/certification :

TÜV 8011005400

La tenue au feu de la matière de la ConSole a fait l'objet d'un essai selon DIN EN ISO 11925-2:2011-02 et a été classifiée dans la classe « E » selon DIN EN 13501-1:2010-01.

Détermination des coefficients de pression et de succion :

Les coefficients de succion et de pression ont été déterminés dans le cadre d'essais en soufflerie aérodynamique. Sur demande, ils peuvent être mis à votre disposition par la Renusol GmbH.

Garantie :

La garantie Renusol n'est valable qu'en cas d'utilisation du système ConSole complet original et de respect des conditions de garantie. Pour la garantie en raison des défauts/garantie de qualité, veuillez-vous référer aux conditions générales de vente de Renusol.

Des déformations élastiques des système ConSole et Streamliner peuvent survenir suite au transport et à l'emballage. Ceci n'affecte pas le en rien leur bon fonctionnement.

Le manuel de montage vous est proposé en l'état actuel sur le site :
www.renusol.com



Vor Montage muss die Standsicherheit des PV-Systems nachgewiesen werden. Die Gebäudekonstruktion muss die zusätzlichen Lasten sicher aufnehmen können.



The structural stability of the PV system must be verified before installation. The building must be able to support the additional weight safely.



Avant le montage, la stabilité statique du système photovoltaïque doit être prouvée. La construction du bâtiment doit pouvoir absorber sûrement les charges supplémentaires.



IT | Avvertenze generali

Sistema di supporto per l'installazione di moduli fotovoltaici su tetti piani con un'inclinazione massima di 5° senza perforazione della copertura.

La resistenza di ConSole ai carichi provocati dal vento è garantita mediante opportuno zavorramento con ghiaia o piastre di pavimentazione. Il peso della zavorra dipende dall'altezza dell'edificio, dalla localizzazione geografica del medesimo, dalle caratteristiche del fondo e dagli indici di vento insistenti sulla zona di installazione.

I valori di riferimento per la quantificazione della zavorra necessaria possono essere desunti da **Eurocode 1 (EN 1991)**.

ConSole è idoneo all'uso e all'immagazzinamento a temperature comprese tra -30 °C e +50 °C.

Il montaggio del sistema di supporto presuppone l'assenza di neve, ghiaccio e sporcizia dalla superficie del tetto.

In fase di montaggio, osservare le regolamentazioni vigenti in materia, lo stato della tecnica e le norme di sicurezza sul lavoro, in particolare quelle inerenti a lavori svolti sui tetti di edifici.

Controllo/certificazione:

TÜV 8011005400

Il comportamento del materiale di ConSole in situazioni di incendio è stato testato in base alla DIN EN ISO 11925-2:2011-02 e inserito nella classe "E" come definita nella DIN EN 13501-1:2010-01.

Rilevamento dei valori di pressione e di depressione:

I valori di pressione e di depressione sono stati rilevati da prove condotte in galleria del vento. Tali risultati possono essere messi a disposizione da Renusol GmbH dietro specifica richiesta.

La garanzia concessa da Renusol è applicabile solo utilizzando il sistema originale ConSole completo e attenendosi alle condizioni di garanzia. In merito alla garanzia legale e commerciale si rimanda alle condizioni generali di Renusol.

Il trasporto e l'imballaggio possono provocare deformazioni al ConSole e agli Streamliner. Il loro corretto funzionamento tuttavia non ne risente.

La versione aggiornata delle istruzioni di montaggio sono reperibili al sito web: www.renusol.com



Il montaggio può aver luogo solo previa certificazione della sicurezza statica dell'impianto fotovoltaico. La struttura dell'edificio deve essere in condizione di sopportare in sicurezza i carichi supplementari su esso applicati.



ES | Indicaciones generales

Sistema de montaje para la instalación de módulos fotovoltaicos en tejados planos con una inclinación de hasta 5° sin penetración en el tejado.

La ConSole se carga con balasto (grava, placas de cobertura, etc.) para resistir las cargas de viento. El peso necesario del balasto depende de la altura del edificio, su posición y de la naturaleza del subsuelo, así como de las cargas de viento.

Los valores orientativos para el balasto necesario se pueden calcular según el **Eurocode 1 (EN 1991)**.

La ConSole se puede guardar y usar a temperaturas ambiente de -30 °C hasta +50 °C.

Para el montaje, la superficie del tejado debe estar libre de nieve, hielo y suciedad.

Tenga en cuenta durante el montaje los códigos vigentes, el estado de la técnica y las directivas de protección en el trabajo, sobre todo en los trabajos en el tejado.

Comprobación/certificación:

TÜV 8011005400

El comportamiento en fuego del material de la ConSole ha sido comprobado según DIN EN ISO 11925-2:2011-02 y clasificado con arreglo a DIN EN 13501-1:2010-01 en la clase "E".

Determinación de los valores de presión y succión:

Los valores de presión y succión han sido determinados en pruebas dentro del túnel del viento. Renusol GmbH puede facilitarle estos datos en caso de solicitud.

La garantía de Renusol solo tiene validez si se utiliza el sistema completo original ConSole y se cumplen las condiciones de la garantía. Para la responsabilidad por deficiencias/prestación de la garantía tenga en cuenta las condiciones comerciales generales de Renusol.

Debido al transporte y al embalaje se pueden producir deformaciones elásticas en la ConSole y el Streamliner. La función no se ve afectada por ello.

Encontrará la última actualización de las instrucciones de montaje en:
www.renusol.com



Antes del montaje se debe verificar la estabilidad del sistema fotovoltaico. El edificio debe poder recibir con seguridad las cargas adicionales.



NL | Algemene aanwijzingen

Montagesysteem voor de installatie van zonnepanelen op platte daken met een helling van maximaal 5° zonder dakdoorvoer.

De ConSole wordt verwaard met ballast (grind, trottoirtegels etc.) om weerstand te bieden aan de windbelasting. Het vereiste gewicht van de ballast is afhankelijk van de hoogte van het gebouw, de ligging en de aard van de ondergrond en van de windbelasting.

Richtwaarden voor de vereiste ballast kunnen worden berekend conform **Eurocode 1 (EN 1991)**.

De ConSole kan worden opgeslagen en gebruikt bij een omgevingstemperatuur tussen -30 °C en +50 °C.

Voor de montage moet het dakoppervlak sneeuw-, ijs- en vuilvrij zijn.

Neem bij de montage de geldende voorschriften, de stand van de techniek en de actuele ARBO-richtlijnen in acht, met name tijdens de werkzaamheden op het dak.

Keuring/certificering:

TÜV 8011005400

De brandeigenschappen van het materiaal van de ConSole zijn volgens DIN EN ISO 11925-2:2011-02 getest en volgens DIN EN 13501-1:2010-01 ingedeeld in klasse "E".

Berekening van de druk- en zuigcoëfficiënt:
De zuig- en drukcoëfficiënt zijn berekend op basis van windtunneltests. De resultaten hiervan worden op aanvraag beschikbaar gesteld door de firma Renusol GmbH.

De garantie van Renusol geldt uitsluitend bij gebruik van het originele ConSole totaalsysteem en inachtneming van de garantieverwoorden. Zie voor informatie m.b.t. de wettelijke garantie a.u.b. de algemene voorwaarden van Renusol.

Door transport en verpakking kunnen elastische vervormingen aan ConSole en Streamliner ontstaan. De functionaliteit wordt hierdoor niet nadelig beïnvloed.

De actuele stand van de montagehandleiding is te vinden op:
www.renusol.com



Vóór de montage moet de stabiliteit van de zonnestroominstallatie worden aangetoond. Om veiligheidsredenen moet de constructie van het gebouw ruim berekend zijn op de extra belasting.

ASSEMBLY PREPARATION

1.

PV module bottom view

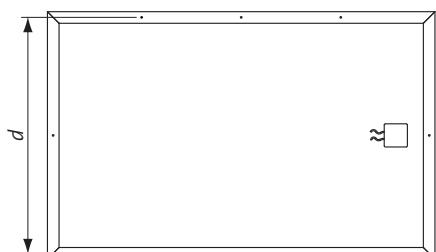


Table for calculating the suitable combination ConSole/PV module

Hole spacing <i>d = mm</i>	4.1	4.2	ConSole	5.2	6.2
661– 700	●				
701– 720	●				
721– 780	●				
781– 840	○				
841– 850	○				
851– 894					
895– 910		●	●	●	
911–1014		●	●	●	
1015–1085		○	○	○	

○ = only with extension rail

Decide on the correct ConSole for the module

First measure the distance "d" of the assembly boreholes on the rear of the module. Then calculate based on the table which ConSole fits the width of the module.

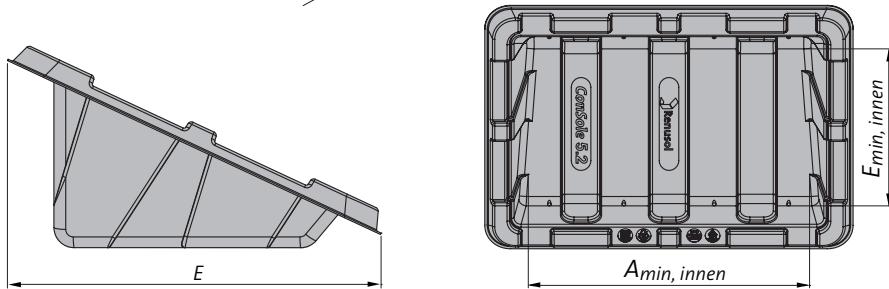
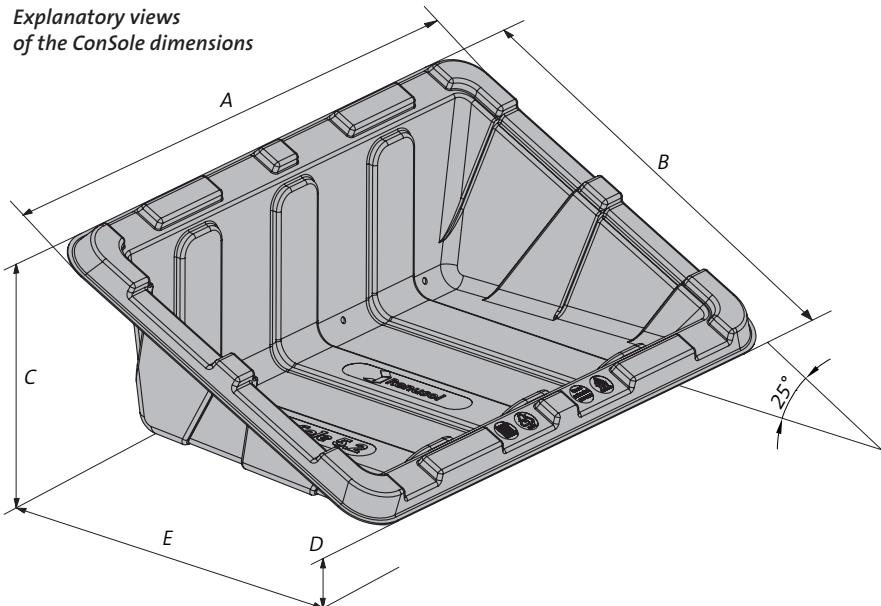
Indicate any extension rails required as a separate position in the order.

If there are several possibilities, select the ConSole that best suits the length of the current module.

Measurement "A" of the ConSole should correspond roughly to the length of the module. Overlapping modules require more ballast due to the larger area exposed to the wind.

Always select the ConSole on which the module surface overlaps the assembly edge of the ConSole as little as possible. The maximum overlap of length "A" per side should not be over 12 cm.

Explanatory views of the ConSole dimensions



Recommended measurement of ConSole/PV module

Measurement	A mm	B mm	C mm	D mm	E mm	$A_{min, interior} \times E_{min, interior}$ mm	Installation surface m ²	Building protection mat mm
ConSole 4.1	1680	840	400	50	740	1300 x 400	0,62	cca. 1400 x 500
ConSole 4.2	1240	1090	530	50	960	890 x 490	0,47	cca. 1000 x 700
ConSole 5.2	1520	1080	500	40	960	1140 x 630	0,76	cca. 1300 x 700
ConSole 6.2	1740	1070	500	50	970	1380 x 630	0,84	cca. 1500 x 700

ASSEMBLY PREPARATION

2.

*Recommended ballast values for ConSoles in kg in terrace systems**

	Up to 8 meters		Building height		Up to 16 meters		
	interior	exterior	Up to 12 meters	interior	exterior	interior	exterior
ConSole 4.1	62	99	73	115	82	128	
ConSole 4.2	58	94	68	110	77	122	
ConSole 5.2	63	106	75	123	84	137	
ConSole 6.2	83	134	98	156	110	173	

Calculation basis

The ballast values are calculated for wind load zone 1 for Germany according to DIN 1055-4:2005-03 and for terrain category III: Suburbs, industrial or commercial zones and forests.

*The system weight is not included in the recommended ballast values.

Additional ballast

In a higher wind load zone: 30% more ballast per level.

When using extension rails: 10% more ballast.

In case of excess length of the modules on the side:

additional ballast in proportion to the excess length.

Calculating the amount of ballast for the ConSole

The wind loads acting on the ConSole require it to be weighed down with ballast. Gravel, stones, plates and similar materials are suitable as ballast.

The table opposite can serve as a guide for the required ballast. These values are calculated according to DIN 1055-4:2005-03 and Eurocode. Several years experience confirm the reliability of the system.

The exterior module series and column require more ballast according to the table.

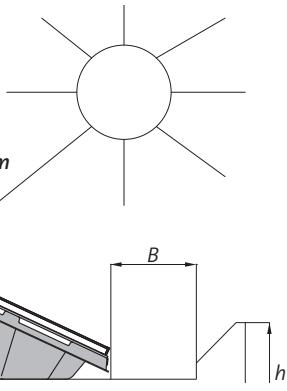
The values indicated prevent the ConSoles from tipping over, sliding or being lifted-ConSoles.

In order to ensure safety against sliding, the coefficient of friction between the roofing and the ConSole must be greater than 0.6 .

This can be established using a spring scale. A ConSole filled with 100 kg of ballast should only move from the spring scale under a horizontal tensile force of over 60 kg.

3.

Distances between rows on the ConSole system



A = minimum distance of the ConSolen series:
ConSole 4.1 >1.2 m
ConSole 4.2/5.2/6.2 >1.5 m

B = minimum roof edge > 1/5 h
h = Building height

Schematic diagram of a ConSole terrace system



Positioning the ConSoles

Check whether the installation surface (e.g., the roof) is enough for the additional roof load.

The surface must be level, clean and not too slippery. With slippery surfaces, e.g., with PVC roof membranes, an anti-slip mat should be used, e.g., a building protection mat.

Place the ConSole with the opening facing south. A minimum distance of a fifth of the building height "h" should be maintained from the side of the roof. Building height 10 metres => minimum distance 2 metres.

The minimum distance between the ConSoles is clear from the schematic diagram.

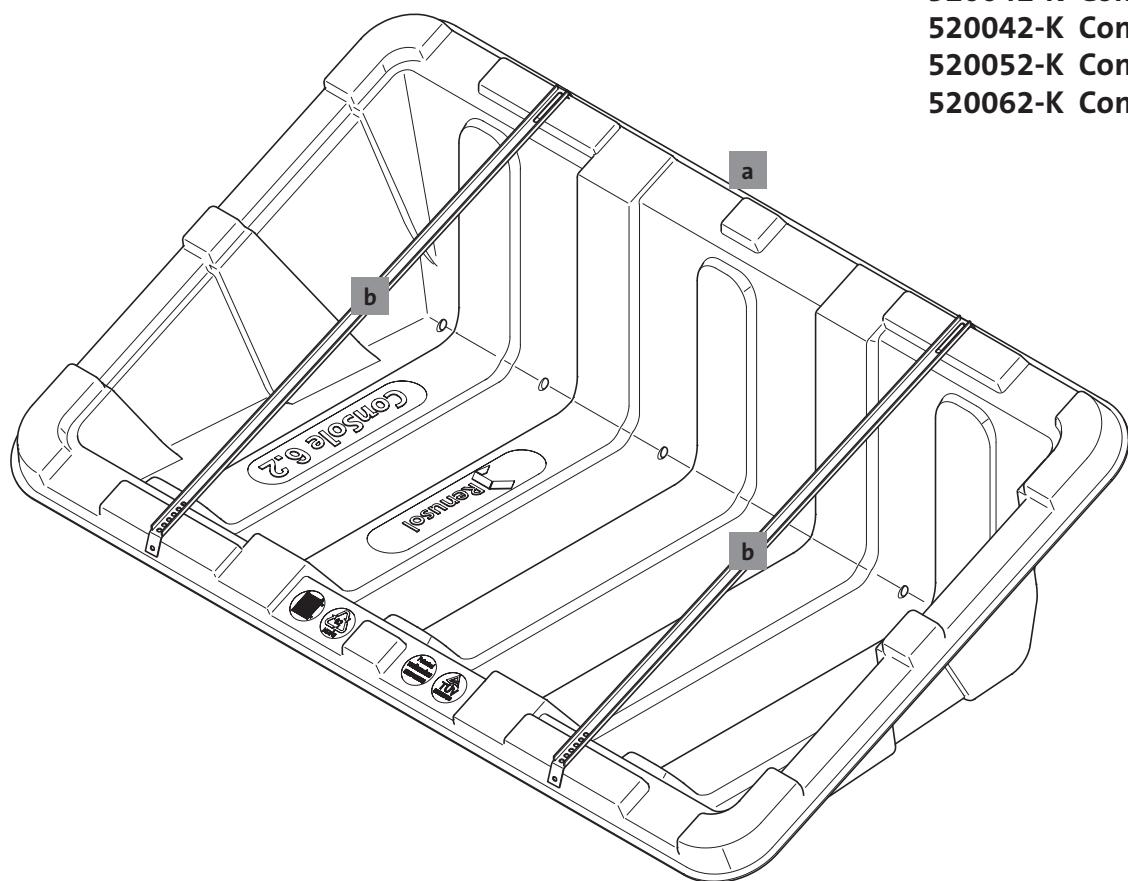
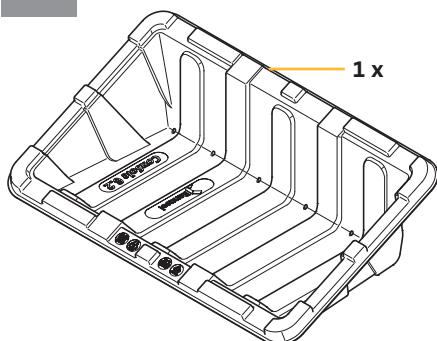
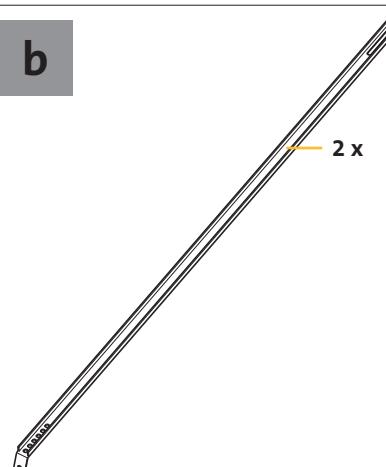
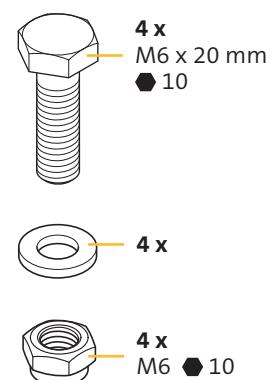
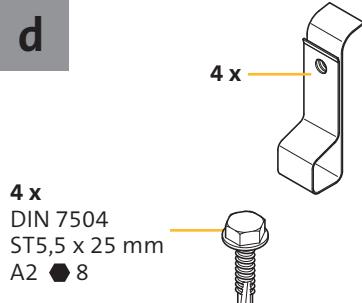
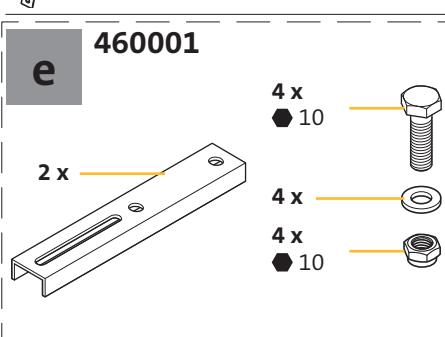
Filling ballast

Now fill in the correct ballast. Reference values here are contained in the table "Recommended ballast values" at the top of this page.

Ballast diagrams for all ConSole types are available on our website www.renusol.com/download as a PDF file.

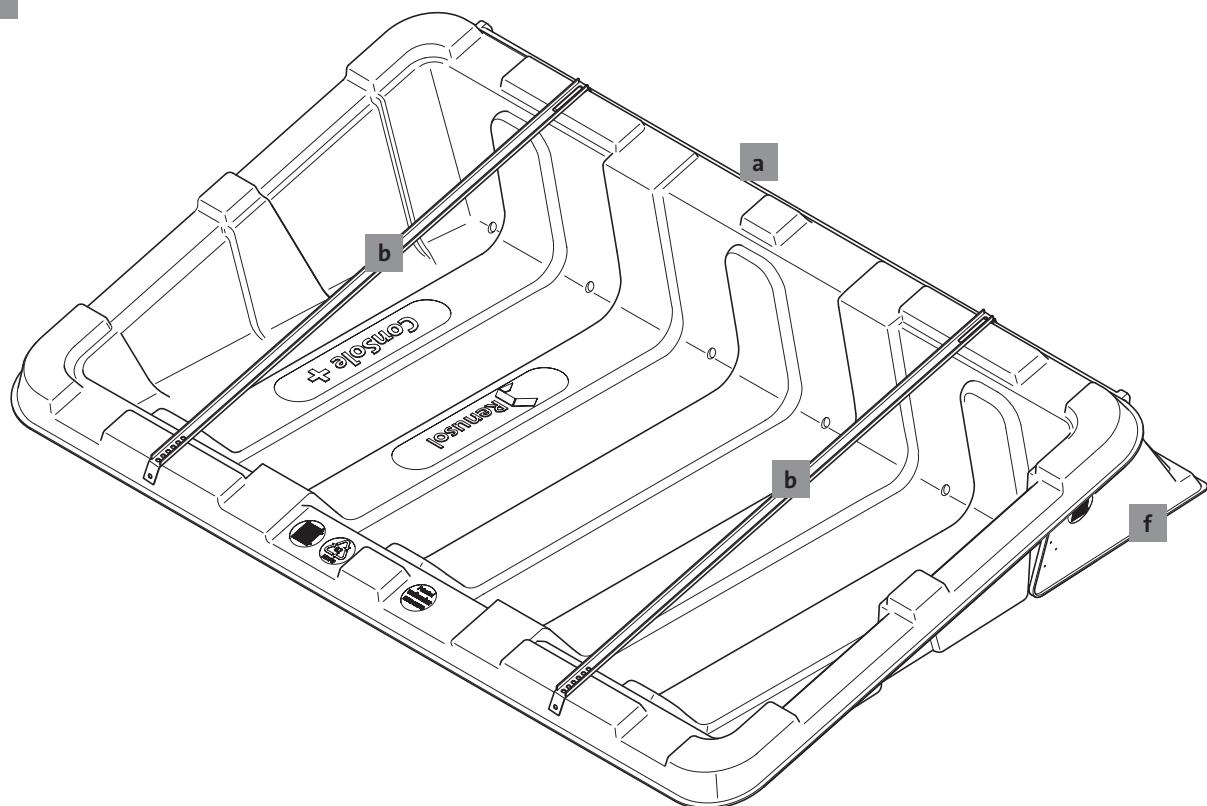
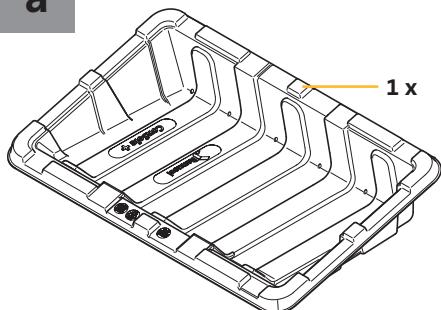
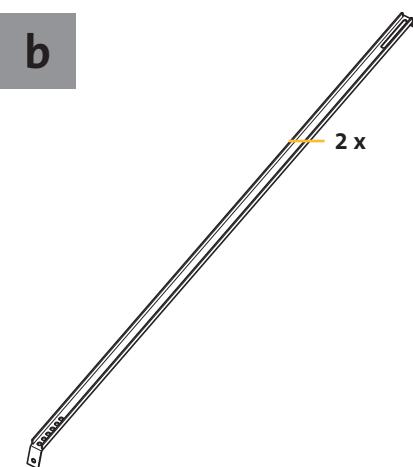
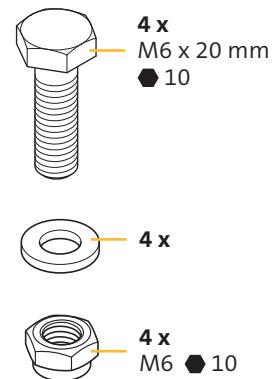
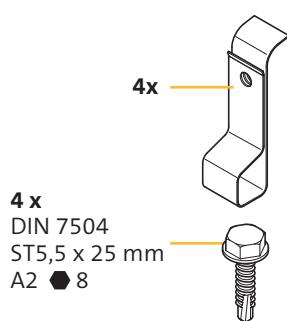
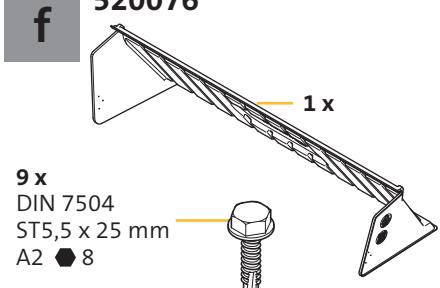
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520041-K ConSole 4.1
520042-K ConSole 4.2
520052-K ConSole 5.2
520062-K ConSole 6.2

**a****b****c****d****e**

+



B520075-K ConSole+
520076 Streamliner+**a****b****c****d****f** 520076

+



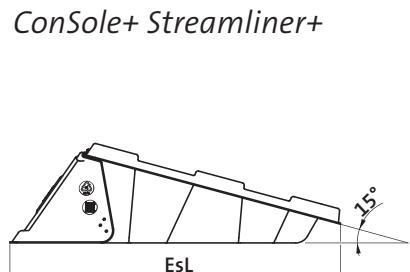
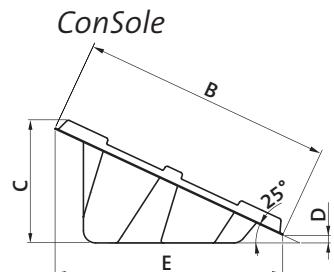
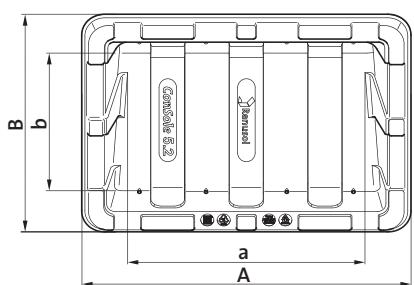
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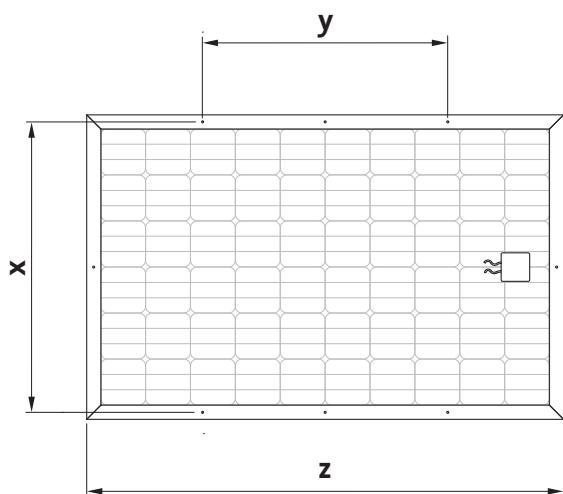
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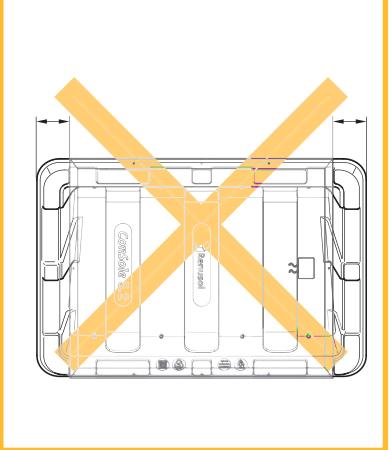
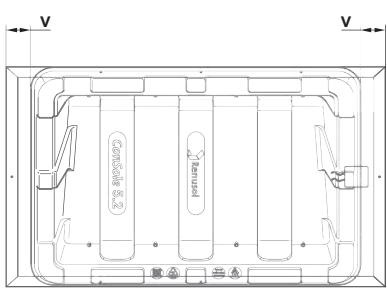
	A mm	B mm	C mm	D mm	E mm	E_{SL} mm	a x b mm	 mm	 kg
ConSole 4.1	1670	870	445	40	790		1260 x 360	min. 1500 x 590	5,1
ConSole 4.2	1250	1090	560	45	980		890 x 490	min. 1100 x 630	5,1
ConSole 5.2	1510	1100	540	40	1000		1080 x 570	min. 1350 x 800	6,7
ConSole 6.2	1730	1080	540	45	980		1320 x 570	min. 1600 x 800	7,2
ConSole+	1730	1100	390	50	1055		1330 x 670	min. 1600 x 905	7,9
ConSole+ Streamliner+	1730	1100	390	50		1340	1330 x 670	min. 1600 x 1240	9,9



	x mm	x mm + 460001	y mm	z mm
ConSole 4.1	661 - 780	781 - 850	500 - 1080	1485 - 1910
ConSole 4.2	895 - 1014	1015 - 1085	570 - 710	1140 - 1490
ConSole 5.2	895 - 1014	1015 - 1085	500 - 1190	1340 - 1750
ConSole 6.2	895 - 1014	1015 - 1085	690-1180	1580 - 1970
ConSole+	895 - 1014		690-1180	1550 - 1730



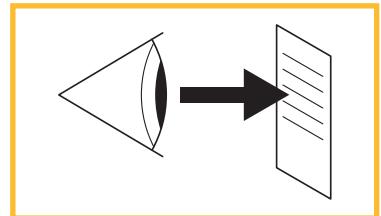
ConSole 4.1/4.2/5.2/6.2 : v < 120 mm
ConSole+ : v = 0 mm



1.

A

B



- Allgemeine Hinweise / General Guidelines / Recommandations générales / Avvertenze generali / Indicaciones generales / Algemene aanwijzingen
- Statische Berechnungen / Structural calculations / Calculs statiques / Calcoli statici / Cálculos estáticos / Constructieberekeningen
- Technische Projektübersicht / Technical project overview / Synthèse technique du projet / Riepilogo tecnico del progetto / Sinopsis del proyecto técnico / Technisch projectoverzicht
- Ballastwerte / Ballast values / Valeurs de lest / Valori della zavorra / Valores de balasto / Ballastwaarden
- Reibbeiwerte / Coefficients of friction / Coefficients de friction / Valori di attrito / Valores de fricción / Wrijvingscoëfficiënten

2.

A

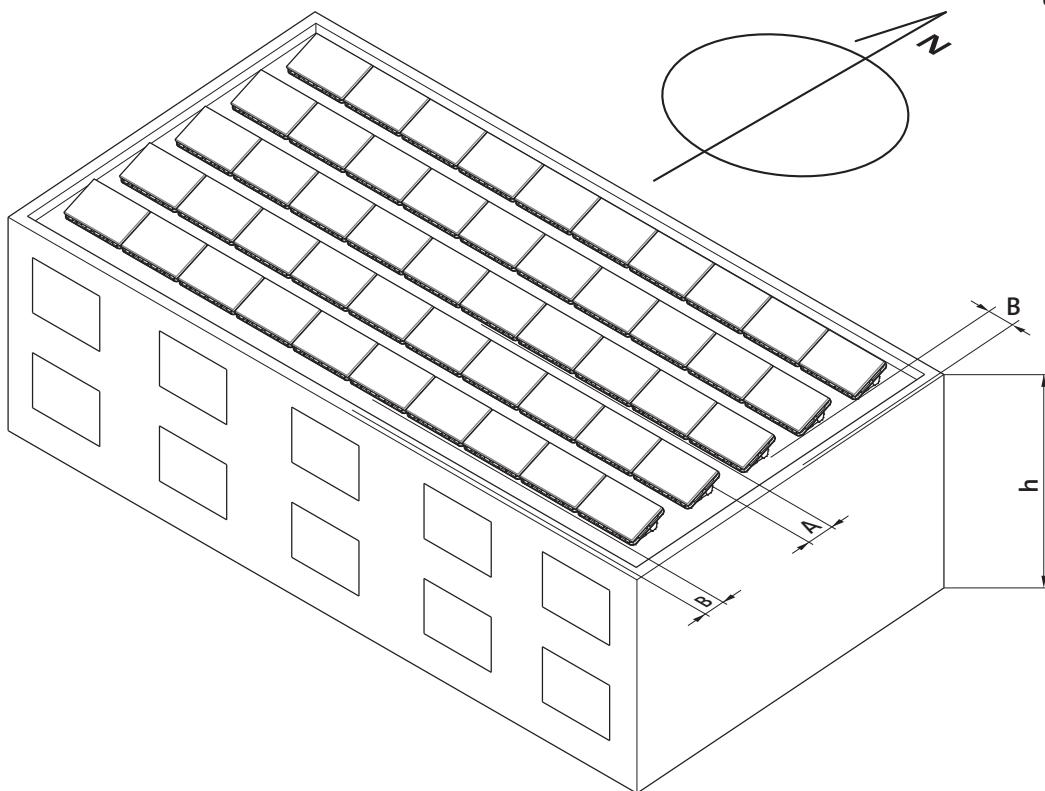
B

A = max.

ConSole 4.1 / 4.2 / 5.2 / 6.2 < 2m
ConSole+ < 1,2 m

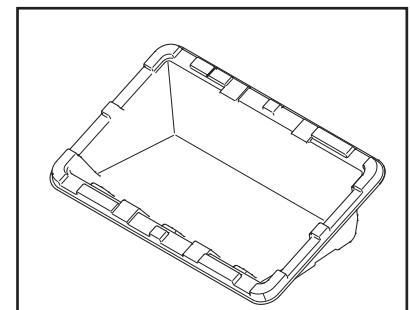
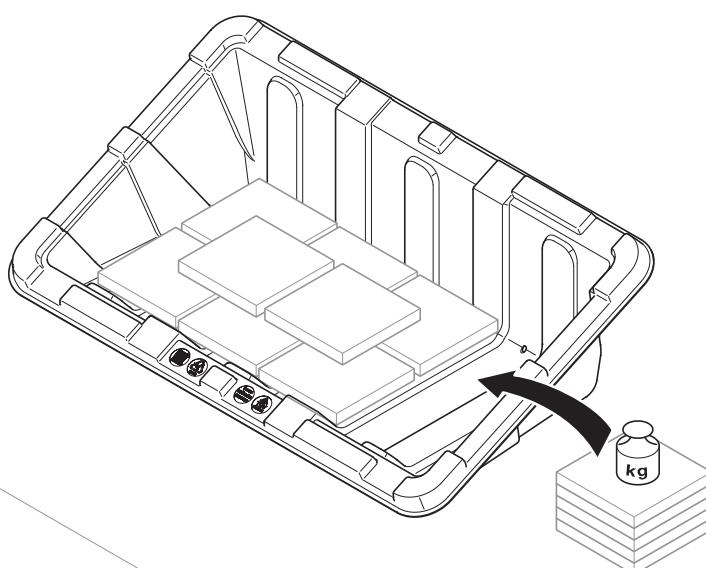
B = min. > 0,2h

ConSole+ > 1,5 m



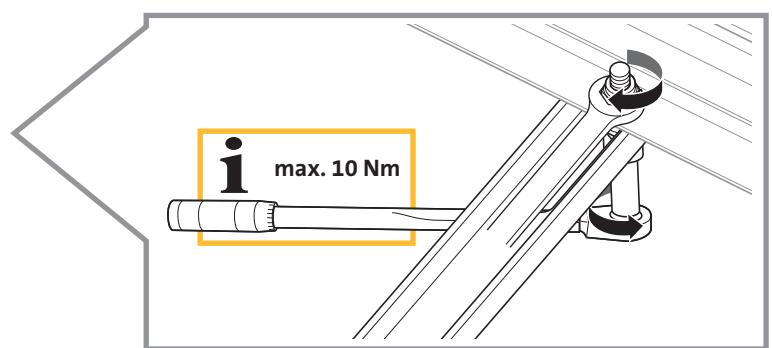
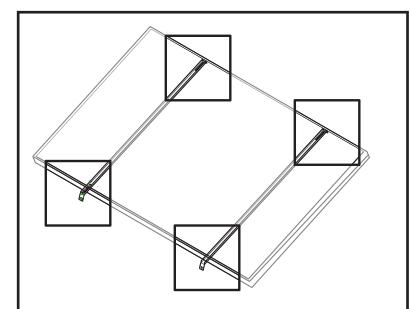
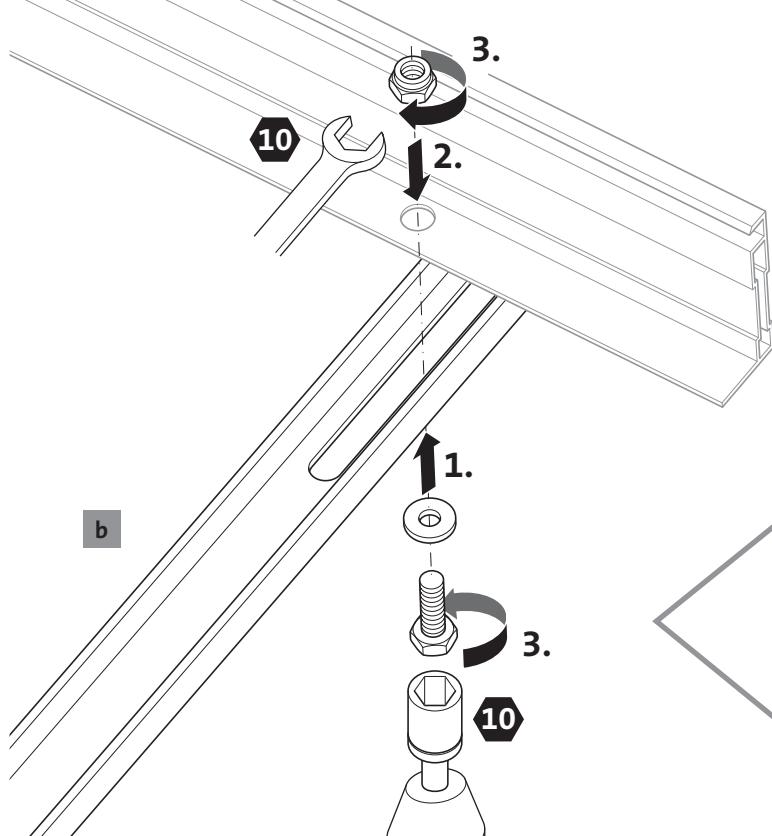
3.

A B



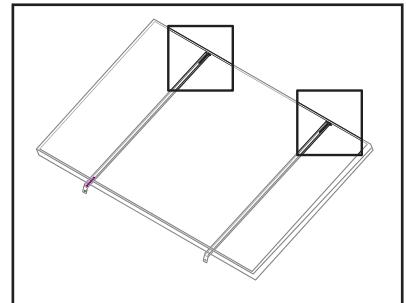
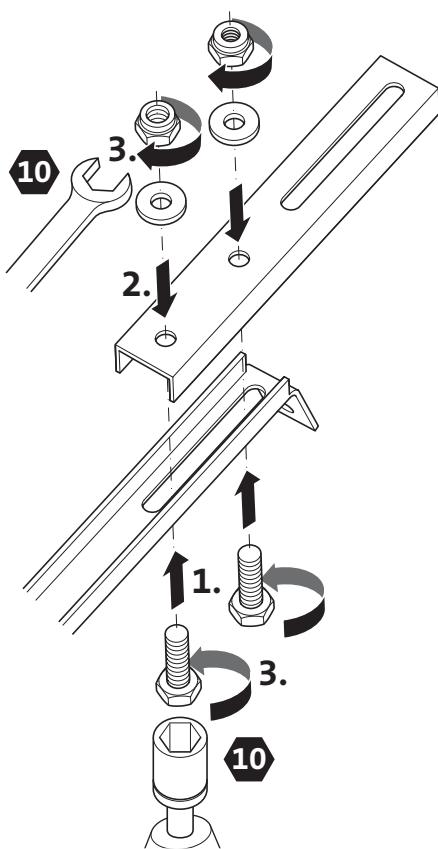
4.

A B



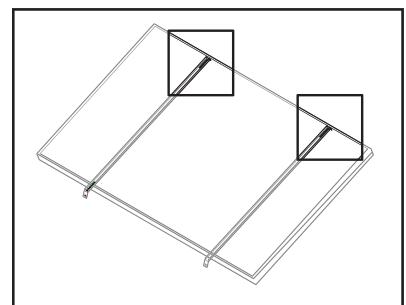
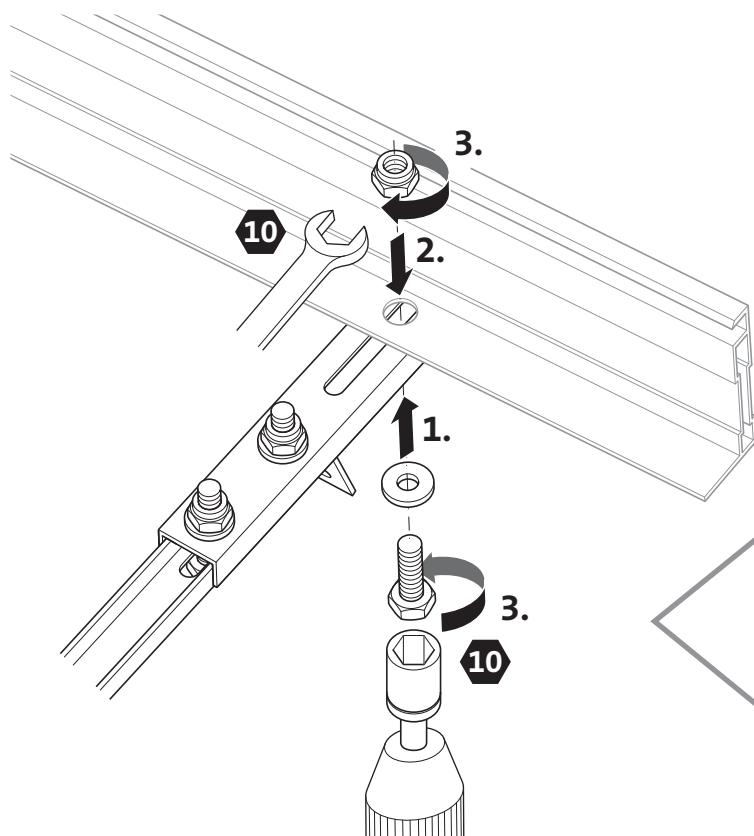
4.1

A + e



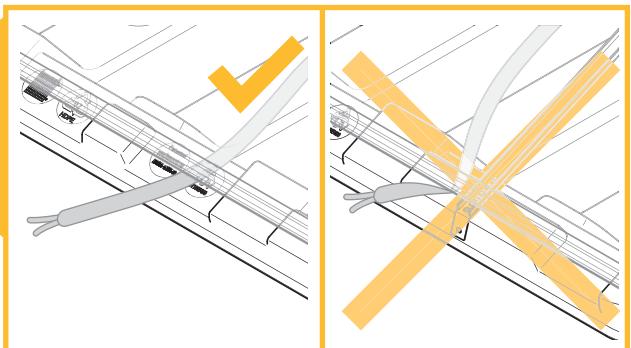
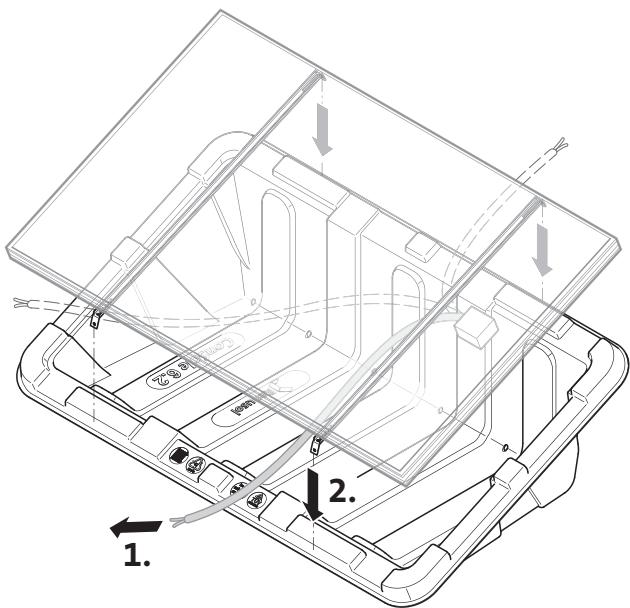
4.2

A + e



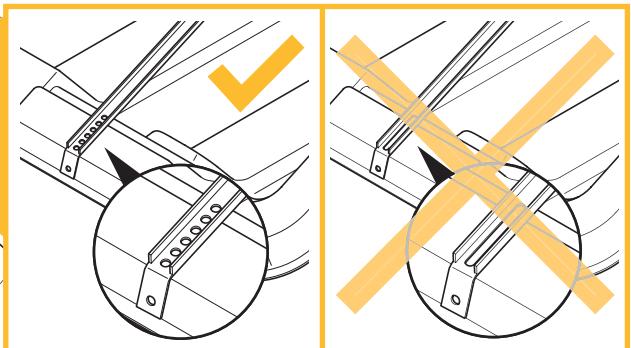
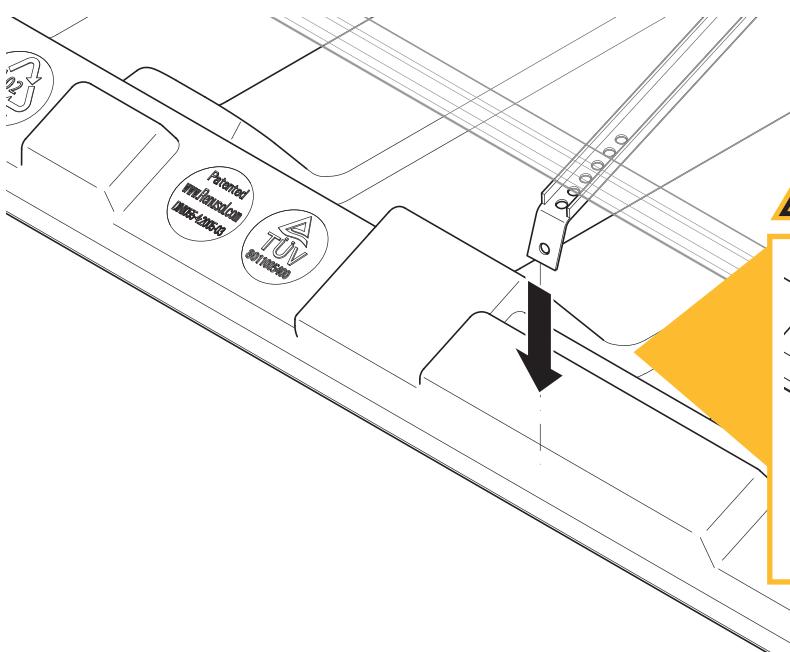
5.

A B



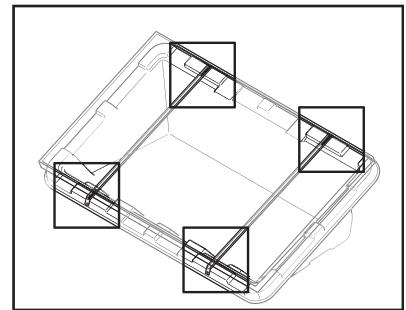
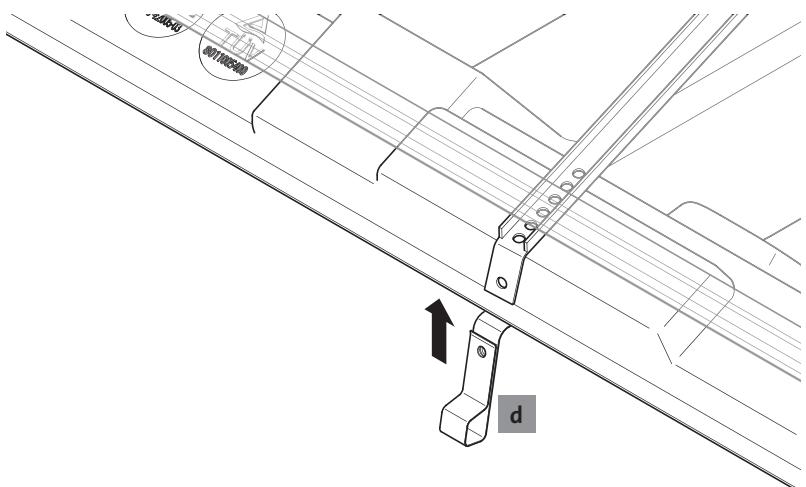
6.

A B



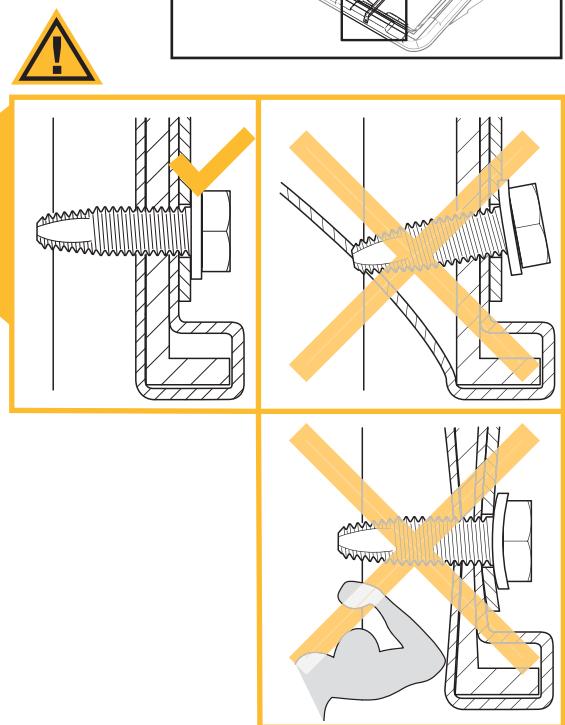
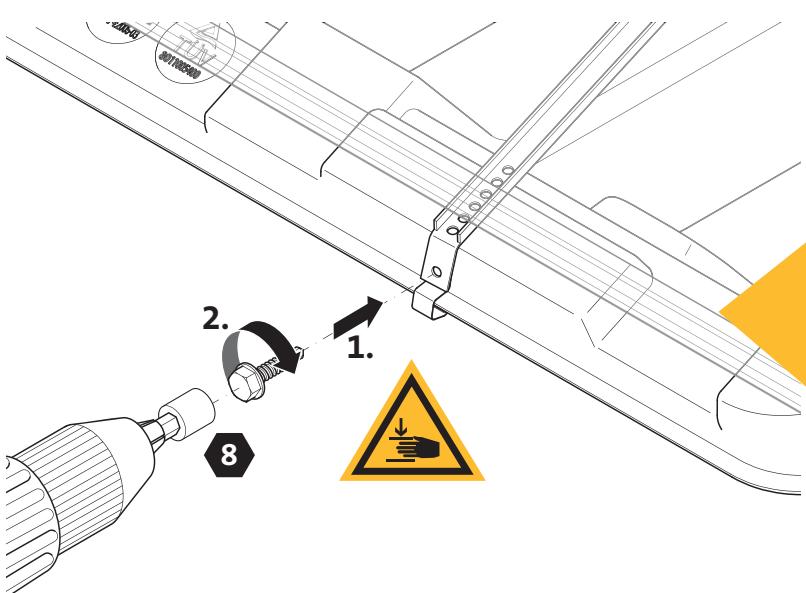
7.

A B + d



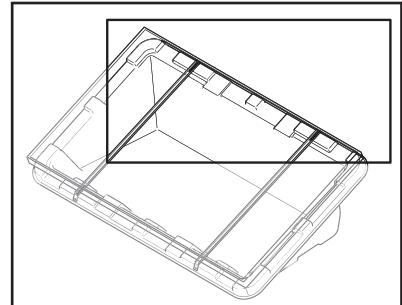
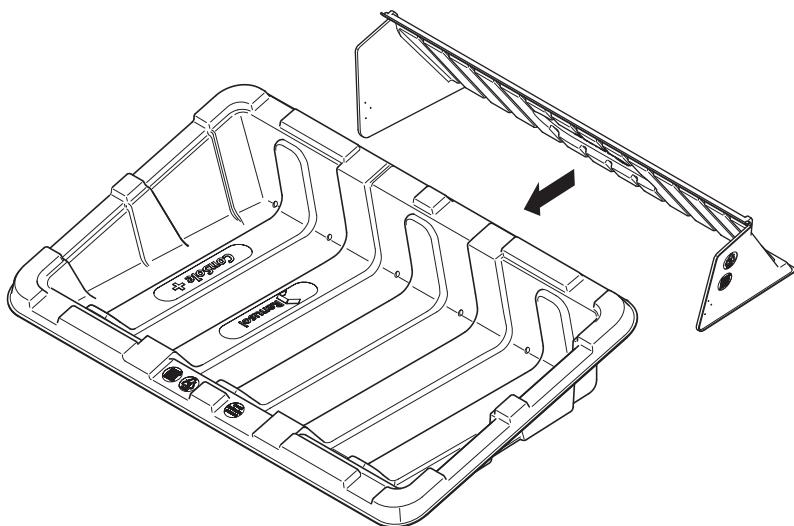
8.

A B



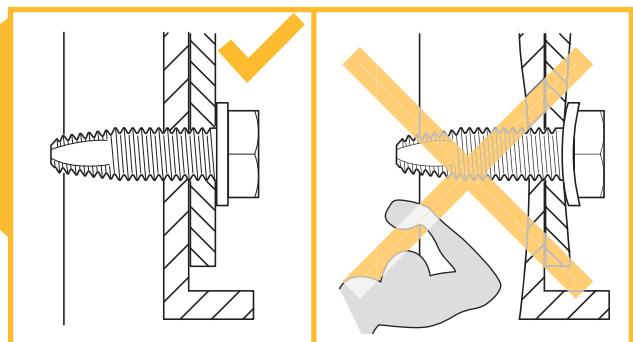
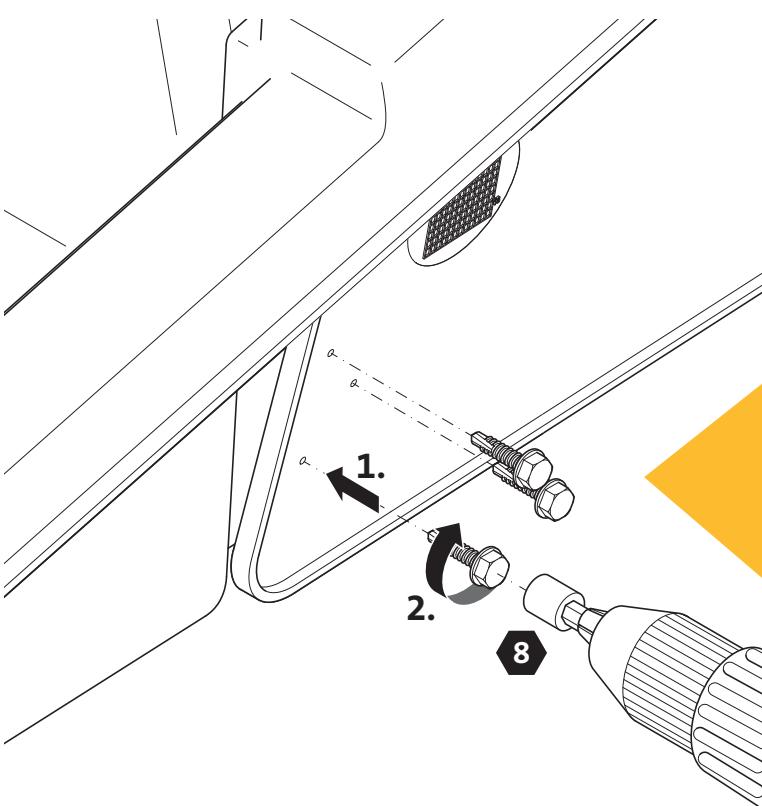
9.

B + f



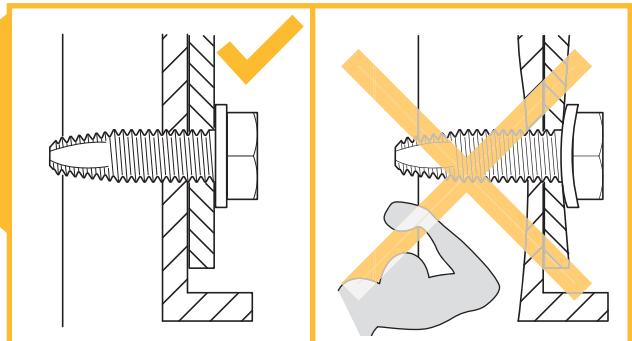
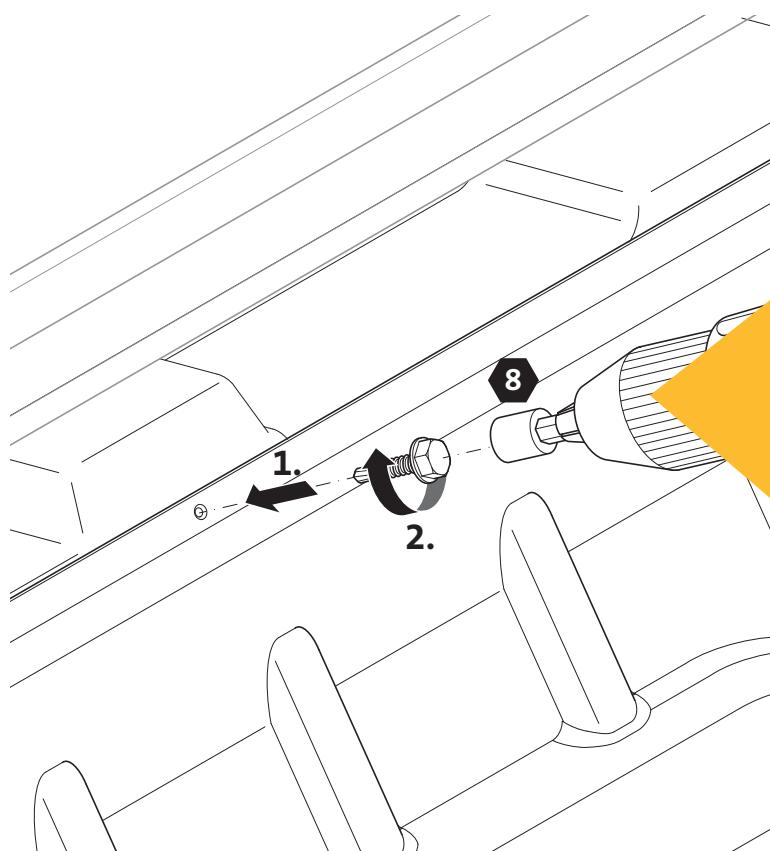
10.

B + f



11.

B + f



Warranty Conditions of Renusol Europe GmbH
(As at January 21st, 2020)

Renusol Europe GmbH, Piccoloministraße 2, 51063 Cologne, Germany ("Renusol") sells the products ("Goods") listed in **Annex A**. Renusol provides a warranty ("Warranty") to the Purchaser ("Customer") in accordance with the provisions of these warranty conditions.

1. Scope of Application of the Warranty

- 1.1 The *Warranty* applies only to *Goods* that the *Customer* has purchased directly from *Renusol*. If the *Customer* has purchased the *Goods* from a third party, any claims shall be asserted only against such third party.
- 1.2 The *Warranty* only applies if *Renusol* has declared vis-à-vis the *Customer* that this *Warranty* is to apply (esp. by letter, email or fax). A verbal undertaking does not suffice.
- 1.3 The *Customer's* claims for defects in accordance with clauses 7 and 8 of *Renusol's* General Terms and Conditions of Business ("T&Cs") in the version applicable to the *Customer* and the respective purchase shall apply in addition to the rights of the *Customer* under this *Warranty* and shall not be affected by the rights granted to the *Customer* under this *Warranty*.

2. Warranty Period

- 2.1 The *Warranty* shall commence at the time at which the risk passes to the *Customer* pursuant to clause 6 of the *T&Cs*.
- 2.2 The warranty period in relation to the *Goods* is set out in **Annex A**.
- 2.3 If *Renusol* provides goods or services to the *Customer* under this *Warranty* (repair or replacement of the *Goods* pursuant to clause 4.3), this shall not affect the length of the warranty period.

3. Making Claims under the Warranty

- 3.1 If the *Goods* are defective, the *Customer* shall immediately notify *Renusol*, in text form (esp. by letter, fax, email) and enclosing a copy of the warranty certificate, no later than within two weeks from detection of the defect; the notice of defect is deemed to have been submitted in time if it was sent within the prescribed time limit. If the *Customer* fails to notify *Renusol* of any defect within the prescribed time limit, any claims against *Renusol* under this *Warranty* are excluded.
- 3.2 The damage report must be submitted in text form (esp. by letter, fax, email) and include a description of all the circumstances of which the *Customer* is aware and which are relevant in order to determine the cause of defect; this description needs to be worded so as to be understood by a *Renusol* technician. This includes, in particular, the nature and location of the installation of the *Goods*, any modifications, repairs or other alterations or work carried out by the *Customer* or *third parties* in relation to the *Goods* as well as a description of the cause of the defect and any consequences. If the above details are not included, claims against *Renusol* under this *Warranty* are excluded. This does not apply if the *Customer* cannot be reasonably expected or is unable to provide these details as part of the damage report. In this case the *Customer* must provide the details without delay as soon as he is able to or as soon it can reasonably be expected of him.
- 3.3 At the request of *Renusol* the *Customer* shall send the *Goods*, at the *Customer's* cost and risk, to an address in Germany specified by *Renusol*, provided this can reasonably be expected of the *Customer*. *Renusol* will reimburse the *Customer* for the costs incurred in this regard if the defect is covered by the *Warranty* or if the *Customer*, through no fault of his own, has failed to realise that the defect is not covered by the *Warranty*. The costs for returning *Goods* that have been repaired or replaced under the *Warranty* are borne by *Renusol* "ex works".
- 3.4 In derogation from clause 3.4, the assertion of claims for defects within the statutory warranty period does not entail any costs for the *Customer*; any costs incurred by the *Customer* are borne by *Renusol* (section 439(2) German Civil Code ["*Bürgerliches Gesetzbuch*", "BGB"]). As a consequence, within the warranty period the *Customer* has to bear return and/or shipment costs under the *Warranty* only if, following a check of the notice of defect, it transpires that *Renusol* is not responsible for the defect asserted by the *Customer* and the

Customer is responsible for the unjustified notice of defect, and in particular if the *Customer* could have realised that *Renusol* was not responsible for the defect claimed.

- 3.5 *Renusol* shall acquire ownership in the *Goods* returned by the *Customer* provided they are not repaired and returned to the *Customer*.
- 3.6 For any items that are additionally sent to *Renusol* by the *Customer* and that do not form part of the *Goods*, *Renusol* shall be liable in accordance with clauses 7 and 8 of the *T&Cs* and the statutory provisions.
- 3.7 If the *Customer* had already firmly connected the *Goods* to a facility and in particular to a building so that, pursuant to sections 93, 94 BGB, the *Goods* have become an integral component of the facility, the *Customer* may request that the *Goods* be checked by way of an on-site assessment; clauses 3.3 and 3.4 shall apply mutatis mutandis with regard to any costs incurred in this regard.

4. Scope of the Warranty

- 4.1 A defect for purposes of this *Warranty* shall only include defects in the *Goods'* material, which limit their suitability for normal or intended use in accordance with the contract concluded with the *Customer*.
- 4.2 If the defect reported by the *Customer* is covered by this *Warranty*, *Renusol* will repair the *Goods* affected by the defect or replace them by supplying new *Goods*. *Renusol* will bear the costs thereof except for the costs for installing or removing the *Goods* at the *Customer's* premises; the *Customer* shall bear these costs himself. *Renusol* shall make the decision whether to repair or replace the *Goods* at its reasonable discretion (section 315 BGB). *Renusol* shall be free to exchange the *Goods*, where required, also for completely overhauled *Goods*.
- 4.3 *Renusol* is entitled to commission third parties to fulfil any rights under the *Warranty*. The *Customer* does not have any claim for *Renusol* to fulfil any rights under the *Warranty*.
- 4.4 Should it transpire that the defect reported by the *Customer* is not covered by this *Warranty*, *Renusol* reserves the right to charge the *Customer* for the cost of checking and, where relevant, transporting the *Goods*. This does not apply if the *Customer* has failed to recognise, through no fault of his own, that the defect is not covered by the *Warranty*. *Renusol* is entitled, in relation to any deliverables under the *Warranty* that are not owed, to charge a flat rate of 20 % of the sale price of the *Goods* reported by the *Customer* to be defective. The *Customer* shall be entitled to prove that *Renusol* has, in fact, not incurred any costs or significantly lower costs.
- 4.5 No claims other than those under clause 4.2 – in particular claims for a reduction of the purchase price, claims for withdrawal or damages claims – shall arise on the basis of this *Warranty*.

5. Exclusion of the Warranty

- 5.1 The following defects are excluded from this *Warranty*:
 - all defects that are not based on a defect in the *Goods'* material (clause 4.1),
 - all defects of *Goods* in relation to which a manufacturing or serial number attached by *Renusol* has been removed or rendered illegible,
 - all defects that have arisen from non-intended use of the *Goods* by the *Customer* or a third party, i.e. where the *Customer* or third party has failed to use the *Goods* for the purpose that was contractually intended or typical,
 - all defects that have arisen in disregard of or as a result of a breach of installation, operating, repair or other instruction manuals pertaining to the *Goods* that may have been provided by *Renusol*,
 - all defects that have arisen from the installation or maintenance of the *Goods* if the installation or maintenance was not carried out by a suitable and professional specialist firm,
 - all defects that have arisen due to external influences on the *Goods* after they have been delivered to the *Customer*, in particular due to changes, modifications, extensions, repairs, maintenance work, use of the *Goods* with non-original parts belonging to the *Customer* or third parties, improper transport or packaging of the *Goods*, vandalism, damage caused by animals, riots, civil unrest (civil war, demonstrations), war, earthquakes, floods, overvoltage, fire, explosion or lightning strike, and
 - all defects caused to *Goods* of *Renusol* that are not included in any of the product groups listed in **Annex A**.
- 5.2 In addition to clause 5.1., defects of the respective *Goods* that have arisen due to a failure to use the *Goods* in accordance with the standard terms and conditions of use as set out in **Annex B** are excluded from the *Warranty*.

6. Final Provisions

- 6.1 This *Warranty* and all claims related hereto shall be subject to substantive German law only, to the exclusion of the UN Convention on Contracts for the International Sale of Goods and any conflict of law provisions; this shall not affect article 3(3) and (4) Rome I.
- 6.2 Insofar as translations of these warranty conditions into languages other than German are produced, only the German version shall be legally binding.
- 6.3 If the *Customer* is a merchant, a legal person under public law or a special fund under public law, the exclusive place of jurisdiction for all disputes arising directly or indirectly under this contractual relationship anywhere in the world shall be Cologne, Germany. The same applies even if the *Customer* does not have any general place of jurisdiction in Germany or if his place of residence or habitual abode is not known at the time these legal proceedings are brought. *Renusol* is entitled to assert claims against the *Customer* at its general place of jurisdiction.
- 6.4 Any amendments or supplements to the *Warranty* as well as all declarations and notifications related to the *Warranty* must be made in text form (esp. by letter, fax, email). This shall also apply to the repeal of this requirement for text form.
- 6.5 If any provision of this *Warranty* is or becomes invalid or unenforceable, in whole or in part, this shall not affect the remainder of the provisions. Statutory provisions shall apply in place of the invalid provision. This shall apply accordingly in relation to any omissions in these provisions that the parties had not foreseen.

A n n e x A

These warranty conditions shall apply to the following *Goods* with the respective warranty period as set out in clause 2.2:

- FS10-S – warranty period: ten years
- FS18-S – warranty period: ten years
- FS10-EW – warranty period: ten years
- ConSole/CS+ – warranty period: ten years
- InterSole – warranty period: ten years
- VarioSole/VS+ – warranty period: ten years
- MetaSole/MS+/MS+P – warranty period: ten years
- IntraSole – warranty period: ten years
- TS+ – warranty period: ten years

A n n e x B

In accordance with clause 5.2, *Goods* in the ConSole and CS+ product group shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.6,
- wind speeds of no more than 130 km/h, and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the InterSole, VarioSole, MetaSole and IntraSole product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- wind speeds of no more than 115 km/h, and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the FS10-S and FS10-EW product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.5,
- dynamic wind pressure of no more than $q_p=1.5 \text{ kN/m}^2$ (for snow load $s_k \leq 1.5 \text{ kN/m}^2$) or $q_p=1.0 \text{ kN/m}^2$ (for snow load $s_k \leq 2.5 \text{ kN/m}^2$), and
- ambient temperatures of no less than -30 °C and no more than 50 °C.

In accordance with clause 5.2, *Goods* in the FS18-S product groups shall be subject to the following standard terms and conditions of use:

- the *Goods* shall only be used subject to a sufficient structural basis, in particular installation on a load bearing device that is sufficiently strong to carry the weight of the *Goods* as well as any additional weather-related loads such as water, wind, leaves or snow,
- surface friction coefficient no less than 0.5,
- dynamic wind pressure of no more than $q_p=1.0 \text{ kN/m}^2$ (for snow load $s_k \leq 2.37 \text{ kN/m}^2$) and
- ambient temperatures of no less than -30 °C and no more than 50 °C.