



Aquatherm MetalOterm

The Economic Stainless
Steel Pre-insulated
Chimney System

- Low Cost System
- Lightweight
- Easy to Install
- High Operating Efficiencies

Energy Products
International

DOMESTIC • COMMERCIAL • INDUSTRIAL

THE ULTIMATE CHIMNEY SYSTEM

The Aquatherm MetalOterm Concept

The Aquatherm MetalOterm chimney system is a double-walled stainless steel chimney system that uses highly efficient insulating material and is ideally suited for use with all types of fuels. The components are built to exact specifications under factory-controlled conditions. The strong outer stainless steel casing and couplers protect the chimney from external damage and corrosion. The smooth stainless steel inner liner produces a rapid stabilization of draft and heats up quickly to prevent harmful condensation as waste gases are exhausted.

A special construction method is employed whereby the inner wall and outer wall are connected to each other on only one side. This allows the strong outer wall to bear the structural load, and leaves the inner wall free to expand or contract without stresses.

An extremely effective gas-tight connection system makes it possible to safely connect to 'forced draught type' over pressure burners.

Because the Aquatherm MetalOterm chimney system uses high efficiency insulation, the heat transfer factors become minimal, making it possible for the system to be inclosed within a building structure while still conforming to building codes.

The Aquatherm MetalOterm chimney system has been designed for the simplest step-by-step installation. The lightweight modular sections are connected with simple twin-screw, easy to use locking bands that provide a sturdy connection and smooth appearance. The assembly of the chimney does not require the use of any special tools or machinery and can be installed in a short amount of time.

The Aquatherm MetalOterm chimney system is available in the following internal diameter sizes: 130, 150, 180, 200, 250, 300, 350, 400, 450, 500, 550 and 600mm. Standard modules are available in 1 meter and 0.5 meter sections. A wide range of accessories and fittings are available making the system capable of handling all types of applications.

The Aquatherm MetalOterm chimney system is designed for a working temperature of 550°C and is capable of withstanding temperatures up to 950°C for short periods.

Because the system is compact and lightweight it requires considerably less space and structural support than masonry stacks and other chimneys.

Chimneys for Domestic, Commercial and Industrial Applications:

It is essential that you make the correct choice when selecting a smoke and exhaust gas chimney system. The planning of a MetalOterm chimney layout, in principle is just like that for any other chimney layout. There are two definite starting points.

1. The planning, from a technical standpoint based on the requirements to sustain combustion, treating the chimney as an integral part of the heating system.
2. The consideration of the building layout, site conditions and the desired architectural treatment of the chimney. Generally, consideration must be given to each of the follow construction possibilities.
 - A chimney mounted inside the building
 - A chimney mounted outside against the building wall
 - A free standing chimney

All three types of options are possible using the Aquatherm MetalOterm chimney system.

Technical data MetalOterm Chimney System

MT standard sections and special components

Standard Stock sizes, 150, 180, 200, 250, 300, 350, 400, 450, 500, 550, 600. Other sizes listed to order.

DESCRIPTION	TECHNICAL DATA												
CHIMNEY DIAMETER	mm	130	150	180	200	250	300	350	400	450	500	550	600
CROSS SECTIONAL AREA	cm	145	175	255	315	490	707	963	1257	1589	1963	2375	2826
OUTER CASING DIAMETER	mm	195	215	245	265	315	375	425	475	525	575	625	675
WEIGHT	Kg/m	5.5	6.5	7.5	8.0	10.5	15.0	16.0	18.0	20.0	22.0	25.0	28.0
INSULATION THICKNESS	mm	30						37					
INSULATION HEAT TRANSFER FACTOR	W/mK	0.046											
MATERIAL THICKNESS	mm	0.4											
MATERIAL DESCRIPTION	S/S	304 STAINLESS STEEL											
STANDARD SECTION LENGTHS	mm	500 / 1000											
WORKING TEMP - SHORT PERIODS	°C	950											
WORKING TEMP - LONG PERIODS	°C	550											

Component Planning and Installation Layout For A MetalOterm Chimney System

Once you have clarified the combustion requirement data, determined the necessary cross sectional area and selected the diameter of the MetalOterm system to be used, you can begin to consider the chimney layout that best suits your requirements.

The first decision is to choose the type of chimney system that you require. Can a building support the system or is it a freestanding type chimney. To simplify the planning and component selection we recommend that you make a free hand sketch of the desired layout, then use the sketches set out on the following pages to assist you with the final details.

The MetalOterm chimney system is of modular construction so that it should always be possible to find the right technical solution for every layout problem.

The planning of the MetalOterm chimney system always begins with the selection of the base arrangement. Here again you have a number of base arrangement possibilities.

Option 1 - The MetalOterm chimney can be mounted on the ground and built up from a standard baseplate (ESAP). An insulated inspection cleanout section (ESTR) can be installed on top of the baseplate. (Figure 1).

Option 2 - The MetalOterm chimney can be mounted on a wall hung console type baseplate (ESMQ). (Figure 2 & 3). The sections can be arranged in two ways depending on the amount of room available.

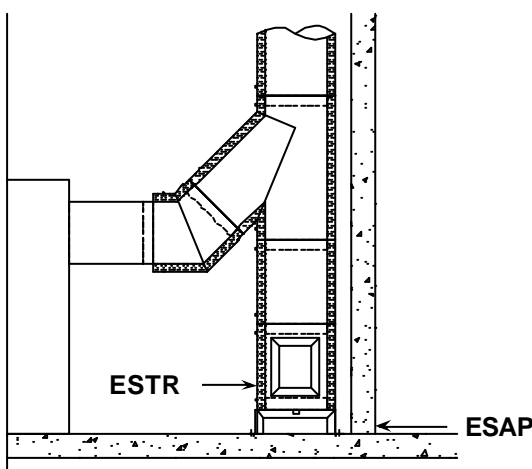


Figure 1: ESAP Base plate with ESTR cleanout

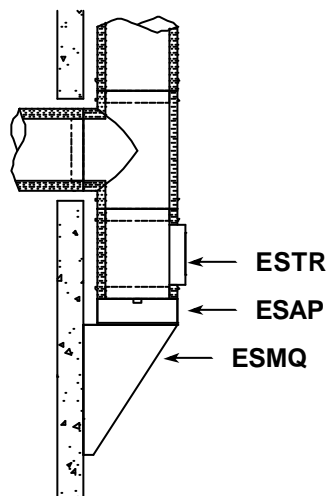


Figure 2: ESMQ Wall Hung Base plate section

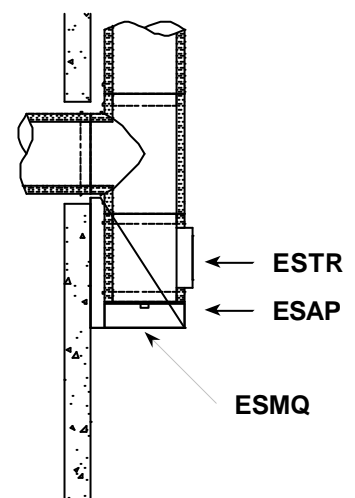


Figure 3: ESMQ Wall Hung Base plate section

The next consideration is the desired connection arrangement between the heating apparatus and the chimney keeping in mind the desired connection height.

You must decide between the two connection possibilities available, a 45° Elbow (ESB45) attached to a 45° junction (EST45) or a 90° Tee piece (EST90). The recommended method for modern pressurized combustion type hot water boilers is to use the 45° Elbow combined with the 45° Junction (Figure 4). However, when the uptake must pass through an outside wall it is recommended that the 90° Tee piece is selected (Figure 5).

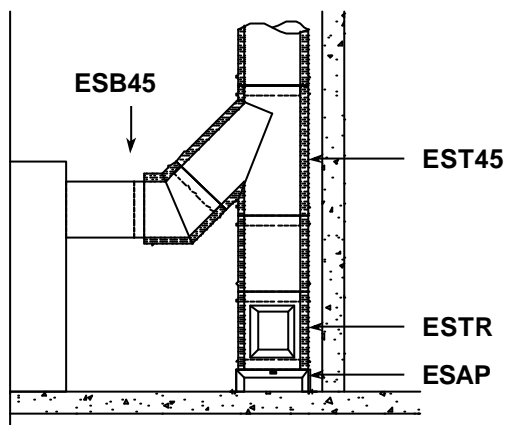


Figure 4: 45° Elbow with 45° junction

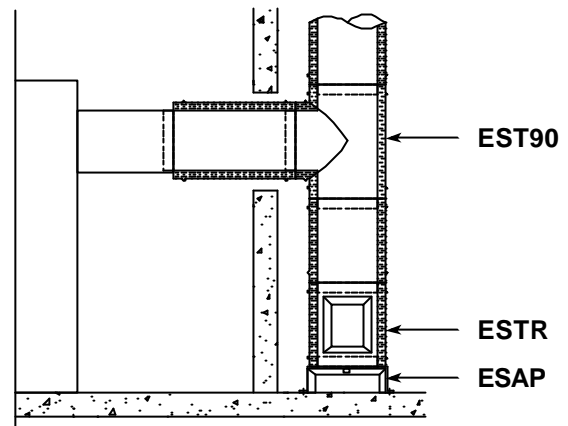


Figure 5: 90° Elbow with 90° junction

The MetalOterm flue gas outlet connection (SA) can be supplied with specially matched flanging or connection layout to match the flue gas outlet of any appliance requiring MetalOterm sections to 600mm I.D.

The flue connection to the heating apparatus can be made with standard MetalOterm sections (ES050 or ES100), or a special make section manufactured to the desired dimension. The transition piece (SA) is available to make the connection to the unit.

A wall-hung console can be used as the foundation for a MetalOterm chimney system (ESMQ, Figure 2 & 3). This arrangement can considerably reduce the difference between the effective chimney height and the MetalOterm system height.

Normally the wall hung mounting brackets are supplied in stainless steel with a standard base plate (ESAP) bolted to it

- ESAP/G = Foundation unit with closed base plate.
- ESAP/K = Foundation unit with closed base plate and with condensate drain fitted.

Installation of the MetalOterm Chimney

When assembling the MetalOterm chimney system, each section must be carefully mounted on top of each other, small end down (spigot end). Care must be taken to line up the seams on the sections and try to keep the seam hidden where possible, i.e. against the wall. (Figure 6 shows the typical installation setup using additional support).

The actual chimney is erected above the Tee junction piece and comprises of standard modular sections fastened together with screw fixed locking bands (ESKL). Two module heights are available, 500mm (ES050) and 1000 (ES100) to suit all application requirements.

Provided that the screw fixed locking bands (ESKL) are used throughout the MetalOterm chimney system installation, the wind load rating is 150kp/m².

The wall fixed brackets and band (ESMB) should be mounted in the vicinity of the connection join of the MetalOterm sections. Corrosion resistant heavy load bearing wall-fixing fasteners should be used when mounted the MetalOterm chimney to the wall, and should conform to all Building Codes.

Refer to table 1 for the recommendations for A, B, C and D.

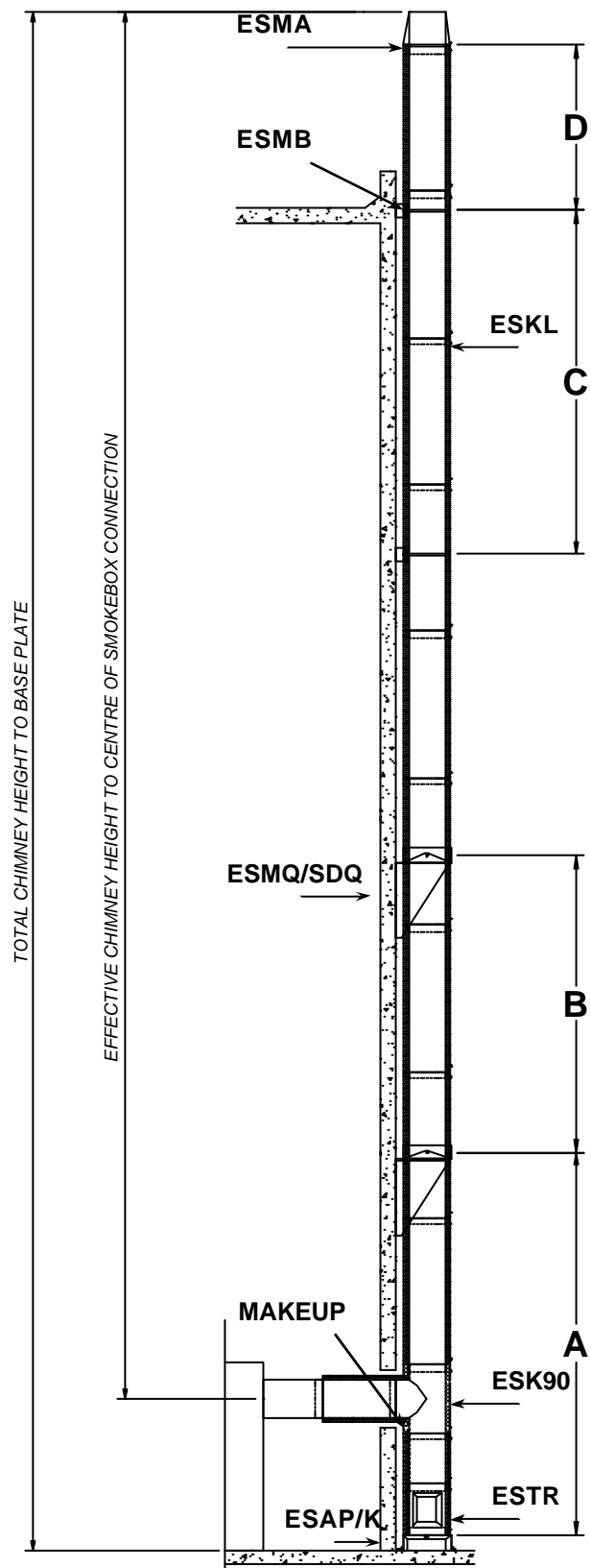


Figure 6: Typical Installation using Additional Support

Other installation types are shown below.

Below is the schematic for a typical installation inside a building with the chimney passing through the roof (Figure 7) and an option for room ventilation (Figure 8).

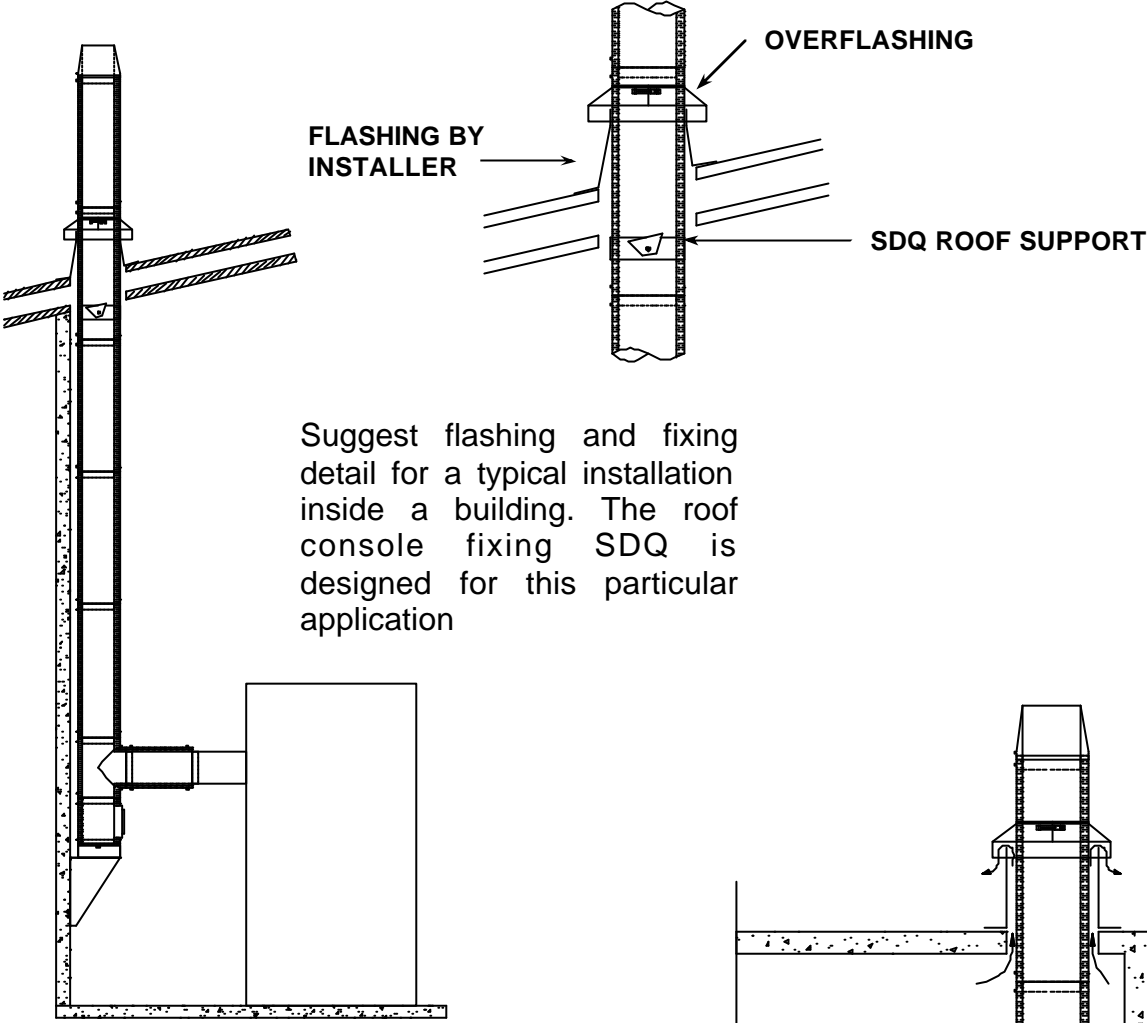


Figure 7: Flashing Detail

Ventilating hood, suggested combination flashing and roof arrangement incorporating boiler room ventilation.

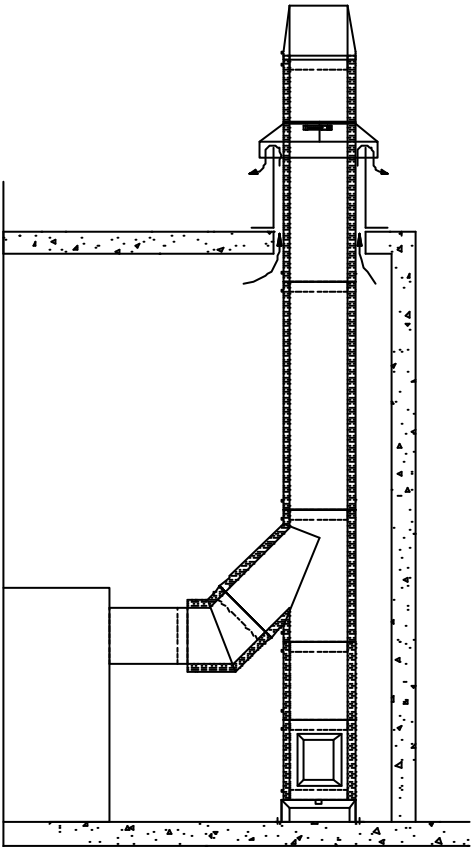


Figure 8: Boiler Room Ventilation

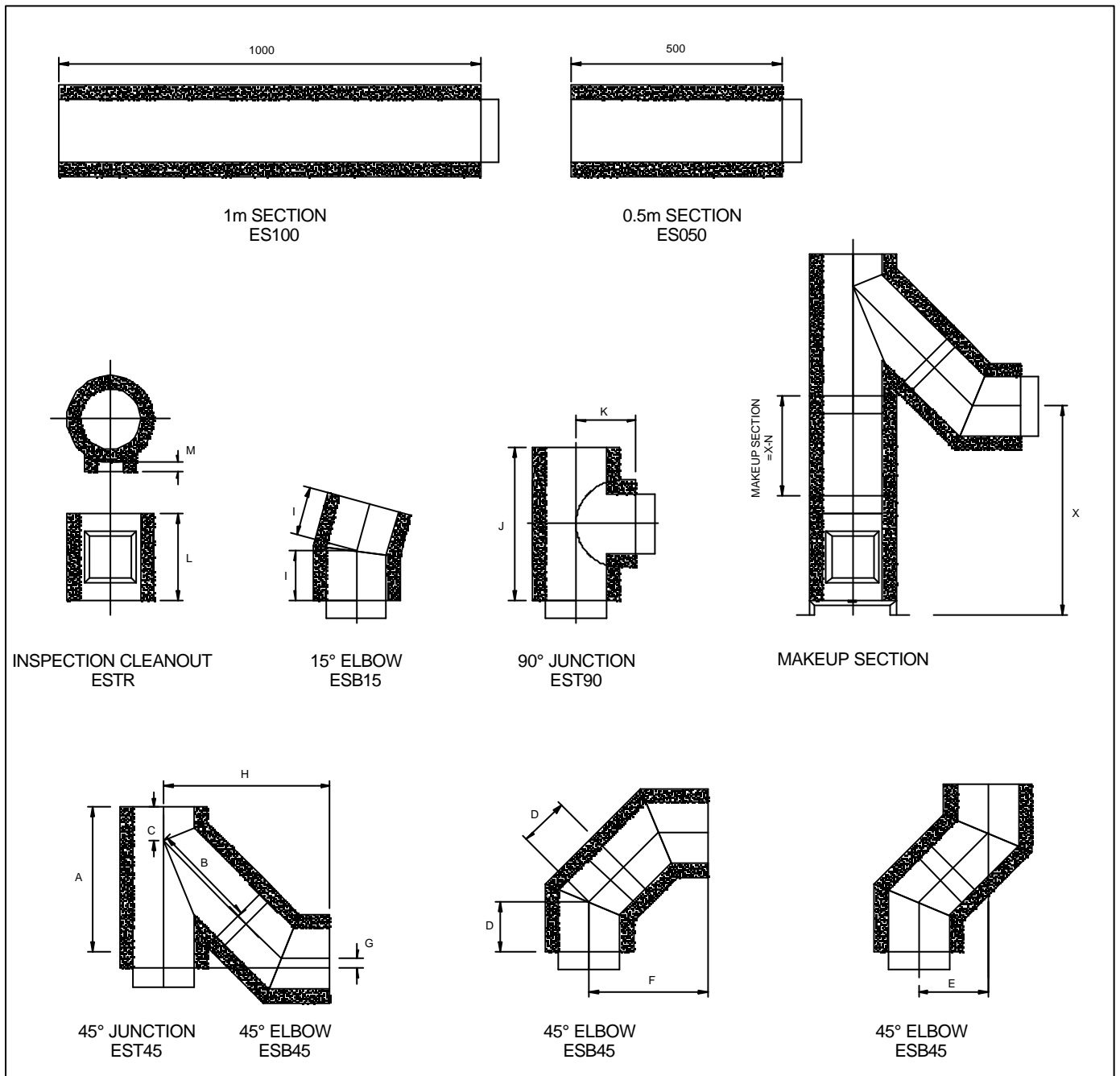
Recommended Installation Information

- A. The maximum height without support on the MetalOterm base normally incorporating an inspection cleanout section ESTR and connection piece EST45 or EST90.
- B. The maximum height between wall mounted supports (ESMQ/SDQ) normally incorporating standard modules ES050 or ES100.
- C. The maximum distance between wall fixing brackets ESMB.
- D. The maximum height above the last wall-fixing bracket, Guy wire support structure is recommended when the chimney extends beyond the recommended height.

INNER Ø MM	MOUNTING HEIGHT (A) Meters	TOTAL WEIGHT APPROX Kgs	MOUNTING HEIGHT (B) Meters	TOTAL WEIGHT APPROX Kgs	DISTANCE (C) Meters	DISTANCE (D) Meters
130	20	110	30	165	2.5	1
150	20	130	30	195	2.5	1
180	20	150	30	225	2.5	1
200	20	160	30	240	2.5	1
250	15	158	20	210	2.5	1
300	10	150	20	300	2.0	1
350	10	160	20	320	2.0	1
400	10	180	20	360	2.0	1
450	10	200	20	400	2.0	1
500	10	220	20	440	2.0	1
600	10	240	20	480	2.0	1

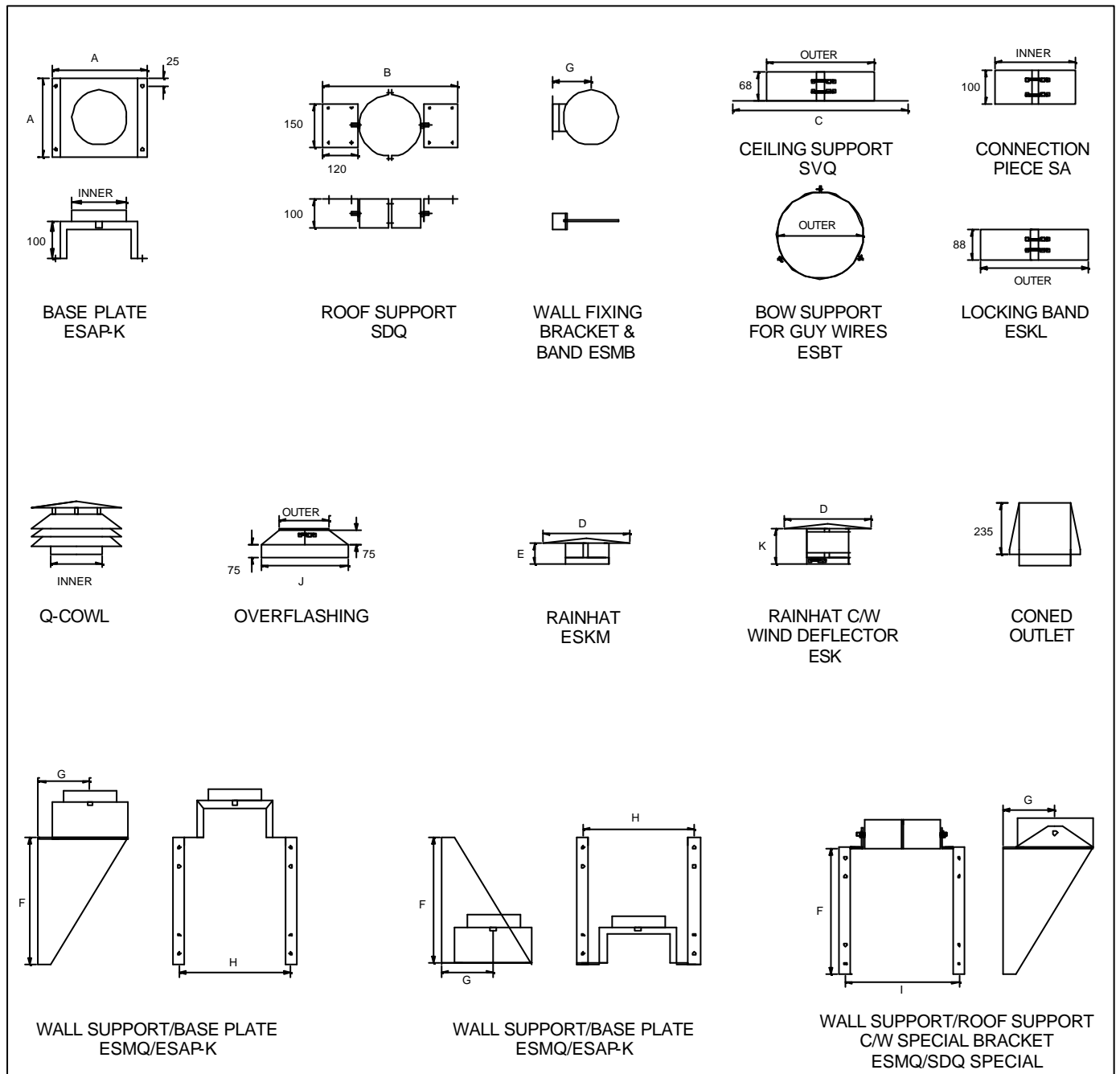
Table 2: Installation Recommendations

MetalOterm Chimney Components



INNER	OUTER	A	B	C	D	E	F	G	H	I	J	K	L	M	N
130	195	380	290	90	110	156	266	7	393	80	345	150	350	30	457
150	215	420	320	100	120	170	290	9	431	85	365	160	350	30	459
180	245	470	360	110	130	184	314	14	476	90	395	175	350	30	464
200	265	510	390	120	140	198	338	15	515	95	415	185	350	30	465
250	315	585	455	130	150	212	362	27	578	100	465	210	350	30	477
300	375	670	530	140	160	226	386	42	648	105	525	240	500	45	642
350	425	750	600	150	170	240	410	56	714	110	575	265	500	45	656
400	475	820	660	160	180	255	435	66	774	115	625	290	500	45	666
450	525	900	730	170	190	269	459	79	841	120	675	315	500	45	679
500	575	975	795	180	200	283	483	91	904	125	725	340	500	45	691
550	625	1050	860	190	210	297	507	103	967	130	775	365	500	45	703
600	675	1125	925	200	220	311	531	115	1030	135	825	390	500	45	715

MetalOterm Chimney Accessories



INNER	OUTER	A	B	C	D	E	F	G	H	I	J
130	195	195	457	495	260	65	312	150	309	341	395
150	215	215	477	515	300	75	362	160	329	361	415
180	245	245	507	545	360	90	382	170	359	391	445
200	265	265	527	565	400	100	442	185	379	411	465
250	315	315	577	615	500	125	512	215	429	461	515
300	375	375	637	675	600	150	612	255	489	521	575
350	425	425	687	725	700	175	682	280	539	571	625
400	475	475	737	775	800	200	752	310	589	621	675
450	525	525	787	825	900	225	812	330	639	671	725
500	575	575	837	875	1000	250	882	355	689	721	775
550	625	625	887	925	1100	275	952	380	739	771	825
600	675	675	937	975	1200	300	1012	405	789	821	875

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