**SOLO+ 100** 

DIY TINY HOUSE CONSTRUCTION GUIDE

& PLAN SET

© Avrame LLC

**Metric**

12-Dec-21

V1.1

**SOLO+ 100**

**SPECIFICATION**

| FLOORS: | 1 floor + loft |
| --- | --- |
| BUILDING AREA: | 45,7 m² |
| FLOOR AREA: | 38.4 m² |
| HEIGHT: | 4.87 m |
| WIDTH: | 4.5 m |
| LENGTH WITH ROOF-LINE | 10,75 m |
| LENGTH WITHOUT ROOF-LINE | 10,16 m |
| WEIGHT | ~12 000 kg |

**Avrame OÜ**

Riia 181a, Tartu, Estonia 51014

soloplus@avrame.com | www.avrame.com

**TERMS AND CONDITIONS**

By Purchasing and Using the Products and Services of Avrame LLC, you agree to the following Terms and Condi tions:

**ACCEPTANCE OF TERMS**

1. All products and services provided by Avrame LLC are protected by International Copyright Laws. Avrame LLC (further referred as The Original Designer, Designer or Licensor) of all Instruments of Service, including plans, drawings, sketches, specifications, and other information provided is and continues to be, even after the sale, the owner of the copyright. The Licensor grants through Avrame LLC to you, the purchaser of the products and servic es, the Licensee, a license to use the Instruments of Service to construct a single wooden construction. Some plans contain a license agreement that allows for more than one use of the plans, but this must be specifically stated in your purchase documents. Any duplication, reuse, sale, or publication, in whole or in part, or derivative use of any plans, drawings, sketches, specifications, or any other document or Instrument of Service, beyond what is stated in your original purchase agreement, will subject you to a claim for wilful infringement of the copyright laws and statutory damages up to $50,000, plus attorneys fees.

2. The plans, you are purchasing, do not have an architectural or engineering signature, seal or stamp. In addition, the plans may need to be modified to comply with your local requirements. Avrame LLC authorize you to use the plans on the express condition that you consult a local licensed architect or engineer of your choice prior to begin ning construction, and that you comply with all local building codes, zoning requirements, and other applicable

laws, regulations, ordinances, and requirements. Many building departments require an architect or engineer to sign and stamp the plans. You must contact your local authorities to find out the local requirements for building.

3. All orders to Avrame LLC are final and no house plans sales will be refunded for any reason.

4. Drawings, sketches and specifications are instruments of service and remain the property of the Designer wheth er the Project for which they are prepared is executed or not. They may not be used in whole or in part on other pro jects or to complete a project without the Designer's involvement, (binding final arbitration) except by the written agreement of the Designer and with appropriate compensation to the Designer. Client agrees to hold harmless and indemnify the Designer from and against all claims, liabilities, losses, damages and costs, including attorney's fees, arising out of or connected with the conversion, modification, misinterpretation, misuse, or reuse by others of the electronic files, drawings and data provided by the Designer under this contract.

5. The Client agrees to limit the Designer's liability to the Client and to all contractors and subcontractors on the project, due to the Designer's negligent acts, errors, or omissions, such that the total aggregate liability of the De signer to all those named shall not exceed the amount paid to the Designer.

6. The plans are protected by International Copyright Laws. Any use of the information contained herein beyond the one-time use authorized by a purchase of prints, or any duplication, publication, sale or distribution of any part of these plans without the prior written consent of the Original Designer represents a violation of International Copyright Laws subject to the prescribed penalties. Any use of the plans, or modifications of the plans, by purchas ers, builders or others is done at their own risk. Licensee should have the plans reviewed by a local professional architect or engineer before the start of construction. The information contained within the Construction Prints is to indicate design intent and basic construction detailing. It is the builder's responsibility to provide standard construc tion details and practices which will result in a structurally sound and weatherproof finished product.

**CEO Greetings**

Hi!

Thank you for purchasing an **Avrame SOLO+** DIY Construction Plan Set.

I have been building house kits for over 20 years, and I knew that finding a tiny house with a great design is super tricky. That’s why we partnered with MIT Professor Sheila Kennedy and her team of design innovators. Together, we developed three concepts that provide maximum flexibility for living and working at home. We brought together the iconic form of the A-Frame, the radical affordability of DIY, and the idea of getting the flexible design to a tiny house that can be adapted to fit your needs - affordable, flexible configuration, durable, and easy to build.

DIY (“Do It Yourself”) is a method of building something by yourself. With the **Avrame SOLO+** plan set, you can make the house by yourself or with the help of a local contractor. Before starting, you should gain perfect clarity on what you want to build. Start by defining what you’ll be using it for.

Although this is a DIY project, **Avrame SOLO+** is a top-performance house. Therefore it is not exactly cheap. Make sure you are building an object of a size you can afford.

The exact cost of your construction must be estimated with a thorough budget. To compile the budget correctly, you’ll need to get a clear understanding of all the materials that play a part in the construction. You’ll have to figure out the cost for those materials and to source them from local shops.

Using this guide, you can do most of the work yourself. Still, you might need professional help for the following activ ities, which are not covered in this guide:

• Building a foundation;

• Installing Windows & doors;

• Installing the insulation;

• Installing the roof;

• Installing water and plumbing;

• Installing electricity;

• Installing heating/cooling solution;

• Installing the interior & exterior paneling;

If you start building by yourself, I expect that you have some knowledge & experience. Otherwise, I strongly recom mend you to consult with professionals and certified experts. And don’t forget to get all required permissions from local authorities.

**Let’s make simpler life A reality,** 

**INDREK KULDKEPP**

CEO at Avrame

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**Table of Contents**

**1. Before You Start**

1-2

**2. Roadmap & Planning**

2.1. Roadmap

3

2.2. Cutting the timber

3

2.3. Assembly preparation

3

2.4. Tools you need

4-5

2.5. Material shopping list

6

**3. Architectural Drawings**

3.1. Floor Plan

7

3.2. Floor Plan with measurements

8

3.3. Cross Section with measurements

9

3.4. Exterior side views with measurements

10

3.5. Exterior end views with measurements

11

3.6. Windows and door specification

12

3.7. Possible window upgrade

13

**4. Cut List**

4.1. Cut list for Sub-floor

14

4.2. Cut list for A-Frame trusses

4.3. Cut list for Dormer

4.4. SD-6 detail tip cut template

4.5. VD-11 detail tip cut template

4.6. VD-17 detail tip cut template

**5. Foundation**

5.1. Post foundation plan with measurements 5.2. Sill beams plan with measurements

5.3. Connecting sill beams

5.4. Foundation & sill beams 3D view

**6. Sub-floor**

6.1. Sub-floor sleepers plan with measurements 6.2. Attaching the sub-floor sleepers

6.3. Sub-floor sleepers 3D view

6.4. Installing the rodent wire mesh

**7. Underfloor OSB sheathing**

7.1. OSB layout plan with measurements

7.2. OSB installation

7.3. Underfloor OSB 3D view

7.4. Underfloor angle connectors plan with measurements 7.5. Installing detail SD-4

7.6. Underfloor 3D view

15-17 18-20 21

22

23

25

26

27

28

29

30

30

31

32

33

33

34-35 36

37

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**Table of Contents**

**8. A-frame trusses**

8.1. A-frame F-1 truss with measurements

39

8.2. Assemble the A-frame F-1 truss

8.3. A-frame F-1 truss 3D view

8.4. A-frame F-1.1 truss with measurements

8.5. Assemble the A-frame F-1.1 truss

8.6. A-frame F-1.1 truss 3D view

8.7. A-frame F-1.2 truss with measurements

8.8. Assemble the A-frame F-1.2 truss

8.9. A-frame F-1.2 truss 3D view

8.10. A-frame F-2 truss 3D view

8.11. A-frame F-2 truss details

8.12. A-frame F-2 truss with measurements

8.13. Assemble the A-frame F-2 truss

**9. Support beam**

9.1. Assemble the support beam

**10. Installing A-Frames**

10.1. Installing A-frame F-1 trusses

10.2. A-frame F-1 trusses layout plan with measurements 10.3. Connecting A-frame F-1 trusses to underfloor 10.4. Installing details VD-1 and VD-2

10.5. Connecting details for Support Beam

10.6. Connecting the Support Beam

10.7. Installing A-frame F-1.2 trusses

10.8. A-frame F-1.2 trusses layout plan with measurements 10.9. Connecting A-frame F-1.2 trusses to underfloor 10.10. Installing A-frame F-2 trusses

10.11. Installing the A-frame F-2 trusses to SD-4

10.12. Connecting the A-frame F-2 trusses

10.13. Details SD-4 and SD-8

10.14. Details SD-4 & SD-8 plan with measurements 10.15. Connecting details SD-5 and SD-9 onto A-Frame truss F-2

40-41 42

43

44

45

46

47

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**Table of Contents**

**11. Dormer**

11.1. Installing detail VD-3

68

11.2. Dormer plan with measurements

69

11.3. Connecting dormer details

70

11.4. Installing Dormer

71

11.5. Installing detail VD-5 onto Dormer

72

11.6. Dormer roof plan with measurements

73

11.7. Connecting dormer roof details

74

11.8. Installing dormer roof

75

11.9. Dormer side details plan with measurements 1

76

11.10. Dormer side details plan with measurements 2

77

11.11. Connecting side details 3D view

78

11.12. Installing detail VD-15 onto dormer

79

**12. SOLO+ 100 structure 3D views**

**13. Interior wall**

13.1. Interior wall 3D view

13.2. Interior wall with measurements

**14. OSB sheathing**

14.1. OSB sheathing on trusses

14.2. OSB sheathing section with measurements 14.3. OSB sheathing 3D View

**15. Distance laths**

15.1. Installing distance laths view with measurements 15.2. Distance laths 3D view

15.3. Installing battens view with measurements 15.4. Battens 3D view

**16. Completing the house**

16.1. Sealing the house

16.2. Choosing the doors & windows

16.3. Soffit and gable boards battens installation 16.4. Roofing

16.5. Finishing the exterior

16.6. Electrical wiring and plumbing

16.7. Insulation & vapour barrier

16.8. Finishing the interior

**17. SOLO+ 100 3D exterior view**

**Congratulations You Made It!**

80-81

82

83

84

85

86

87

88

89

90

91

91

91

92

92

92

93

93

94

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**1. Before You Start**

**Errors & Omissions**

**!**

Every attempt has been made to provide you with a set of error-free plans. There will always exist the pos sibility of errors. It is essential that the builder carefully review and check all details, including dimensions and material quantities, before construction. Responsibility for the interpretation of these plans lies with the builder. If errors are found, please report them, and we will correct them promptly.

**Printing & Scaling**

**!**

No drawings are to be scaled if there is no scale ratio on the sheet. If you will print out this manual, use A4 paper format and ‘Actual size’ print mode. Do not use ‘Fit’ or ‘Shrink oversized pages’ mode.

**Loads & Specifications**

**!**

Structural analysis, codes, and loads have not been included in this guide as each country has different snow, wind, etc., requirements to consider. If specific construction conditions must be met, please consult with your local building authorities before initiating this project to comply with the building codes in your area. We also recommend consulting local specialists for proper HVAC solutions.

**Adaptations**

**!**

This plan has been prepared to conform to generally accepted construction practices. However, because of variations in building codes, we cannot guarantee that our plans conform to the requirements in your area. Therefore, changes or alterations (for example, adding extra trusses or additional fixing details) may be nec essary to comply with the codes and regulations of your jurisdiction. Changes to these plans to meet local building codes are the builder’s responsibility. There may be other reasons for using different materials as described in our shopping list and material specifications. There may be slightly different materials available in your area, maybe you are used to additional fixings (screws instead of nails, etc.), or you want to upgrade/ use something different. When substituting/upgrading any materials, please think about how it will affect the structural integrity of the building. If needed, consult with a local engineer.

**Qualifications**

**!**

The enclosed construction plans are intended for use by an individual familiar with general construction methods and techniques. The builder should also be competent with the safe operation of tools and machin ery required to construct such a building.

**Lumber Dimensions & Properties**

**!**

You can permanently alter the lumber to larger dimensions, but we recommend using more minor dimen sioned details. When using larger lumbers, please keep in mind that it may affect your building and pay atten tion to the changes you are creating to openings. Please also remember that wood is natural and is prone to swelling and shrinkage, which should not pose a concern, but some measurements may vary.

**Foundation**

**!**

This guide does not include instructions on how to build a foundation. Check your local requirements for tiny houses; some areas may have unique restrictions for foundations. Building foundations function to distribute the weight of your home, stopping the plot’s subsoil from spreading and the structure facing an unequal set tlement — both of which could lead to structural problems for your home down the line. The type of founda tions system you choose (stripe, post, and beam or screw foundation) depends on the type of soil and depth of local frost penetration you’re laying your building foundations onto. Regardless of the foundation type you will use, make sure to have proper ventilation below the structure. Getting the building foundations right is key to preventing future structural issues for your house.

Page No

**1**

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**1. Before You Start**

**Screws vs. Nails**

**!**

When deciding between nails and screws, keep in mind that nails are less brittle, so they provide greater shear strength. They may bend under pressure, but they seldom snap. Common nails are suggested for structural joining and framing; when you prefer screws, ensure that you use special structural screws. When you are ready to nail or screw parts together, be careful not to do so too close to the edges or ends of the lumber, it may cause the lumber to split or crack.

**Door and Window Options**

**!**

Before purchasing doors and windows, ensure that your opening sizes and directions are correct for proper fits and consider the thickness of preferred flooring materials and interior fittings. Always ask for the manu facturer’s installation manual.

**Framing the openings**

**!**

Before you begin assembling the frames for the walls, you need to make the parts of the structure that will accommodate door and window(s). The entrance door and any eventual window you decide to install in your building need to have proper framing in place. The structure has to be dimensioned based on the actual dimensions of the door or windows you will install. Since the new frame for the door or window has to be installed in the wall, some modifications to the basic framing of the fence are necessary.

**Roof**

**!**

The roof plan shows the surface area that is needed to be covered. Consult with a local specialist to have ventilation battens if you use another roofing cover other than bitumen shingles.

**Exposed timbers**

**!**

All exposed timber parts and foundation sill beams should be treated with a minimum of 2 coats of your preferred wood protective paint or stain to extend the life of the siding/cladding. According to paint supplier instructions, repaint the cabin when required (usually every 5-7 years, depending on the climate, this may vary). You are free to substitute cladding with other exterior finishes as well.

**Break from construction**

**!**

If you take a break from construction, use some plastic film or tarpaulin to cover the roof and unused materi al so that rain won’t wet all the wood.

**2**Page No

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**2. Roadmap & Planning**

**2.1. Roadmap**

Our instruction is designed to be completed in stages, preparation, foundation, underfloor beams, A-frames, dormer, and detail installation.

To build SOLO+, follow the following steps:

• Define the essential aspect of your build and learn what you are getting yourself into. • Compile a comprehensive budget, plus verify you can afford it.

• Learn what resources you are going to need.

• Learn the assembly and building process.

• Buy all the materials for the build.

• Double-check you have all the tools for the work.

• Prepare the foundation.

• Build water, sewage, and electricity inputs.

• Assemble the structural elements.

• Put the elements together.

• Install door & window(s).

• Complete the structure, make it whether-tight and finish the exterior (roofing, siding, etc.) • Install insulation and vapour barrier.

• Install services (wiring and plumbing) and interior finishing materials.

**2.2. Cutting the lumber**

The list of lumber details to cut is provided in the Cut List section. Cutting everything at once saves time and guarantees fewer mistakes. We recommend you mark all parts with a detail number right after cutting. When parts are marked, you can grab them from the pile of materials and start working with them without the need for re-taking measures.

**2.3. Assembly preparation**

The SOLO+ is designed to be assembled in the next stages:

1. Cut all details, mark and sort them

2. Assemble all the details of the structural elements

3. Install all the elements together.

**NOTE!**

One person can assemble the elements but positioning the elements together requires a minimum of 2 persons. Before starting the assembly work, double-check that you have all the necessary materials, tools, hardware, and safety equipment.

**3**Page No

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**2. Roadmap & Planning**

**2.4. Tools you need**

The below list identifies all the essential tools you’ll need for the successful assembly. It may be possible to work without some of these tools. However, it may prove to be more complex and time-consuming. You don’t need to buy these tools; there are specialized rental companies for equipment and tools almost everywhere.

**Essential Tools**

****

**Drill/Driver**

Corded or cordless. Cordless being more convenient

**Hammer**

A plain hammer is over the top

**Tape Measure**

Keep it handy all the time - you need it mostly.

**Hand Saw**

To cut all your parts and ensure proper fits.



**Snap Off Knife**

You’ll need this to cut certain packaging and materials.

**Level**

To ensure your unit is installed level and not on a slant or slope.

**Rafter Square**

If any part of your structure is not cut correct, it may cause other parts to fit improperly.

**Ladder**

You’ll need one to reach the higher are as of your structure during assembly



**Stapler**

To install the va pour-barrier and wind-membranes onto the frame

**Pencil**

to mark and make notes

**Drivers / Torx**

Make sure you have

plenty of torx bits for

a screws, so you can

replace them as soon

as they wear off.

**4**Page No

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**2. Roadmap & Planning**

**Optional Tools**

****

**Circular Saw**

Faster and works bet ter on certain materi als such as plywood and OSB

**Safety**

**Miter Saw**

Will make short work of anything that needs to be cut.

**Table Saw**

Trim and various oth er pieces may have to be “ripped” down. a table saw provides accurate cuts to make the job easier

**Reciprocating Saw** While working you might need to adjust the size of some wood part or boards. Having cutters availa ble will make your life easier.



**Safery Glasses** is must on any DIY project

**Gloves**

At least 3-4 pairs available at all times.

**First Aid Kit**

Bands-aids, antisep

tic and other stuff

**5**Page No

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

**2. Roadmap & Planning**

**2.5. Material shopping list**

With this shopping list, you can go to any hardware store and pack the materials required to build. Don’t forget to take price offers from different stores; prices may vary significantly.

Please check Excel file for budgeting.

| **TYPE** | **MATERIAL** | **AMOUNT \*** | **UNIT** |
| --- | --- | --- | --- |
| Timber | Batten 30 x 45 x min length 3000 mm | 65 | m |
| Cladding (min thickness 18 mm x min length 3000 mm) | 36 | m² |
| OSB-3 12 mm | 169 | m² |
| OSB-3 22 mm | 42 | m² |
| Timber (C24) 45 x 145 x 5100 mm | 84 | pcs |
| Timber (C24) 45 x 145 x 3600 mm | 76 | pcs |
| Fastening | Angle connector 40x40x40x3 mm | 3 | pcs |
| Angle connector 90x90x65x3 mm | 37 | pcs |
| Angle connector 94x50x50x3 mm | 78 | pcs |
| Angle connector screw 4,0x40 mm | 1428 | pcs |
| Bolt (C3) M 10x120 mm | 42 | pcs |
| Concrete screw 10x120 mm | 42 | pcs |
| Construction screw 5,0x100 mm | 724 | pcs |
| Nail (C3) 2,8x60 mm | 3460 | pcs |
| Nail (C3) 3,4x90 mm | 1968 | pcs |
| Nail plate 100x200 mm | 44 | pcs |
| Nail plate 40x160 mm | 24 | pcs |
| Nut (C3) M 10 | 42 | pcs |
| Washer (C3) M 10x25 | 42 | pcs |
| Hydro Isolation | Bitumen hydro isolation tape W200mm | 4.2 | m |
| Insulation | Insulation Material in batts 100 mm | 165 | m² |
| Insulation Material in batts 50 mm | 165 | m² |
| Tape for vapour barrier | 130 | m |
| Vapour barrier | 165 | m² |
| Other | Rodent Wire Mesh | 51 | m² |
| Roof | Preferred roof covering | 111 | m² |

\* Amount of material on this table below is calculated precisely, we recommend to buy always ~10% extra, screws and nails you can buy a whole package, depending on box size it’s available (50/100/200 box)

**6**Page No

© Avrame LLC | SOLO+100 Metric | V1.1 - 12-Dec-21

3. Architectural Drawings

3.1. Floor Plan

Floor area 38,4 m2

Building area 45,7 m2

Heating volume 85 m3

Heating (fireplace) 5kW

8, m2

|  |  |
| --- | --- |

|  | | | |
| --- | --- | --- | --- |
|  | | | |
|  |  |  | |
|  |  |  |
| 9, m2 |  | |
|  | | | |

|  |  |  |
| --- | --- | --- |
|  | | |

3, m2

| Heater |
| --- |
|  |

|  | | |
| --- | --- | --- |
|  |  |  |
|  |  | |













|  |  |  | |  |
| --- | --- | --- | --- | --- |
|  | |  |
|  |  |  |
|  |  | |  |
|  |  |
|  |  |
|  | |  |
|  |  |
|  |  |  |
|  |  |
|  |  | | |
|  | | | |
|  | | | |

|  |  |
| --- | --- |
|  |
|  |
|  |
|  |
|  |

|  |  |
| --- | --- |
|  |
|  |
|  |

7,2 m2



Ifloor loft

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC7 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.2. Floor Plan with Measurements

2

|  |
| --- |
|  |
|  |
|  |

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
| 379    Heater |  |  |  |
|  |  |  |  |
|      |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |
| 2 |  | |
|  |  | |

 9

|  | | | |
| --- | --- | --- | --- |
|  |  |  | |
|  |  |  |
|  |  | |
|  | | | |
|  | | | |

|  |  |  |
| --- | --- | --- |
|  | 2 | |







8



288 29

|  |  |
| --- | --- |

|  |
| --- |
|  |







8

7













7

2







|  | 29 |  |  | 7 |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  | |  |  |  |  |
|  | |  |  |  |
|  | |  |  |  |
|  | |  |  |  |
|  | |  |
|  | |  |
|  |  |  |
|  | |  |
|  |  | | |
|  | | | |
|  | | | |



9







9

2

|  |  |
| --- | --- |
|  |
|  |  |
|  |  |
|  |  |
|  |  |



Ifloor loft Cold water

Lights

Vent air in

Hot water

Vent air out

Sewage drain

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC8 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.3. Cross Section with Measurements

3





7





739



8





7



8





|  |
| --- |

Floor cover 20 mm

Frame 45x145 cc 600 mm

Roof cover

OSB 12 mm

Frame 45x145 cc 600, batt insulation 150 mm

Vapour barrier Cladding 14 mm

 













2

2

Frame 45x145 cc 600

|  |
| --- |



|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |

379

Post foundation

|  | |  |
| --- | --- | --- |
|  |  |  |

|  | |
| --- | --- |
|  | |
|  |  |

|  |
| --- |
|  |



|  |
| --- |
|  |

Floor cover 20 mm

OSB 22 mm

Vapour barrier

Frame 45x145 cc 600, batt insulation 150 mm OSB 12 mm

Sleepers 45x145 cc 600

Space to ground 200 mm

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC9 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.4. Exterior Side Views with Measurements

7

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | | | | | |  |
|  |  | | | | | | | | |  |
|  |  | | | | | | | | |  |
|  |  | | | | | | | | |  |



7

8





|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | | | | | | | | | |  |
|  |  | | | | | | | | | | | |  |
| 3 |  | | | | | | | | | | | | 3 |
|  |  | | | | | | | | | | | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |



7

8





| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC10 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.5. Exterior End Views with Measurements

3



7

8





|  |
| --- |

|  |
| --- |

|  | |  |  |  |  |  | |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | | | |  |  | | | | |

|  |
| --- |

|  |
| --- |



|  |
| --- |

|  |
| --- |

 8

3



7

8





|  |
| --- |

|  |
| --- |

|  | |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | | | | |  | | | | |

|  |
| --- |

|  |
| --- |



|  |
| --- |

|  |
| --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC11 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.6. Window and Door Specification

| Window/door specification | | | | |  |
| --- | --- | --- | --- | --- | --- |
| Mark | Plan view | Inside  elevation | Hole dimensions | Note | Amount |
| W-1  Double  door/  window | Outside  1600  Inside | 0  0  1    2      1600 | W= 1630 mm  H= 2130 mm | Livingroom,Bedroom | 2 |
| W-2  Window | 900 | 0  0  9  900 | W= 930 mm  H= 930 mm | Bathroom | 2 |
| W-2  Roof  window | 0  8  1  1  780 | Roof window | W= 820 mm  H= 1220 mm | Loft | 1 |
| D-1  Interior  door | 800 | 0  0  1  2 | W= 830 mm  H= 2130 mm | I floor | 2 |

This window/door specification is used only for window/door dimensions and amounts. Window/door opening directions, colors, materials and other necessary things must be

coordinate with owner.

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC12 |
| --- |

© Avrame LLC

3. Architectural Drawings

3.7. Possible Window Upgrade

3











7

3

3

9

9

|  |  |  |  |  |  |  |  |  |  |  | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  | | | | |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  | |  |

|  |
| --- |









2

3 3

9

9

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | | |  |  |
|  |  |  |  | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | | |  |  |
|  | |  |  |  | |

|  |
| --- |

|  |  |
| --- | --- |

|  |
| --- |

|  |  |
| --- | --- |

|  |
| --- |

|  |  |
| --- | --- |

|  |
| --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC13 |
| --- |

© Avrame LLC

4. Cut List

4.1. Cut List for Subfloor

SD-1 QTY

| 5  4  1 |  |
| --- | --- |

5000

| 12 |  |
| --- | --- |

SD-2QTY

| 5  4  1 |  |
| --- | --- |

4500

Impregnate and mark this details.

| 22 |  |
| --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC14 |
| --- |

© Avrame LLC

4. Cut List

4.2. Cut for A-Frame trusses

SD-3 QTY

| 5  4  1 |  |
| --- | --- |

| 4 |  |
| --- | --- |

SD-4

4500

QTY

| 5  4  1 |  |
| --- | --- |

3370

SD-5

| 2 |  |
| --- | --- |

QTY

| 5  4  1 |  | 12 |  |
| --- | --- | --- | --- |

4500

SD-5.1

| 5  4  1 |
| --- |

4355

4500

51454

QTY

| 3 |  |
| --- | --- |

QTY129 4671 285SD-6

2

7

5

| 27 |  |
| --- | --- |

°

4

1

5085

For these dimensions, see page 21.

74 1975 285

SD-6.1 5

4

1

63°

2

7

°

QTY

| 3 |  |
| --- | --- |

2333

1109 285

SD-7

| 5  4  1 |
| --- |

2

1393

7

°

QTY

| 22 |  |
| --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC15 |
| --- |

© Avrame LLC

63°

4. Cut List

74 2118 74

SD-8

63°

5

4

1

QTY

| 14 |  |
| --- | --- |

2266

QTY

2070 74

SD-8.1

| 5  4  1 |
| --- |

63°

| 3 |  |
| --- | --- |

SD-9

2144

| 23 | A |  | 4845 |  | ~~88~~ |
| --- | --- | --- | --- | --- | --- |
|  |  | |  |  |
|  |  | 5  4  1 |  |  |  |
| 63° |  | 4956 27° |  |  |

| 88B |
| --- |

QTY

SD-10

| 5  4  1 |  |
| --- | --- |

2152

| 4 |  |
| --- | --- |

QTY

| 4 |  |
| --- | --- |

SD-11

| 23 | A |  | 2160 | A23 | |
| --- | --- | --- | --- | --- | --- |
|  |  | |  |
|  |  | 5  4  1 |  |  |
| 63° | 63°2206 | |

588 88

| B  27° |
| --- |

QTY

| 2 |  |
| --- | --- |

QTY

SD-12

|  | |  |  |
| --- | --- | --- | --- |
| 5  4  1 |  |  |  |

| 8 |  |
| --- | --- |

SD-13

676

| B    27° |
| --- |

1452 88

|  | |  |  |
| --- | --- | --- | --- |
| 5  4  1 |  |  |  |

1540

QTY

| 4 |  |
| --- | --- |

| 23 A63°    5  4 |
| --- |

| B  88    °    7  5  2  4 |
| --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC16 |
| --- |

© Avrame LLC

| 27° |
| --- |

4. Cut List

| 88  B    °    7  5  2  4 |
| --- |

SD-14

1487 88QTY

|  | |  |  |
| --- | --- | --- | --- |
| 5  4  1 |  |  |  |

1575

SD-15

| 5  4  1 |  |
| --- | --- |

555

SD-16

| 4 |  |
| --- | --- |

QTY

| 14 |  |
| --- | --- |

QTY

| 5  4  1 |  |
| --- | --- |

| 4 |  |
| --- | --- |

395

SD-17

| 5  4  1 |  |
| --- | --- |

413

QTY

| 4 |  |
| --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC17 |
| --- |

© Avrame LLC

4. Cut List

4.3. Cut List for Dormer

789 285

QTYVD-1

°

7

| 5  4  1 |
| --- |

2

| 2 |  |
| --- | --- |

5

1074

934 285 VD-1.1

QTY

| 5  4  1 |
| --- |

°

7

2

1219

| 4 |  |
| --- | --- |

74 2336 74

VD-2

4

1

63°

QTY

63°

| 2 |  |
| --- | --- |

2484

VD-3

| 5  4  1 |  |
| --- | --- |

2310

VD-4

| 5  4  1 |  |
| --- | --- |

2490

QTY

| 1 |  |
| --- | --- |

QTY

| 1 |  |
| --- | --- |

1890 285

VD-5

| 5  4  1 |
| --- |

° 7

2

QTY

| 2 |  |
| --- | --- |

2174

VD-6

| 5  4  1 |  |
| --- | --- |

2174

QTY

| 5 |  |
| --- | --- |

QTYVD-7

| 5  4  1 |  |
| --- | --- |

930

| 2 |  |
| --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC18 |
| --- |

© Avrame LLC

VD-8

| 5  4  1 |  |
| --- | --- |

4. Cut List

QTY

| 1 |  |
| --- | --- |

1154

VD-9

| 5  4  1 |  |
| --- | --- |

443

VD-10

| 5  4  1 |
| --- |

270

18 125 1074 102 VD-11

5

5

4

°

1

1317

For these dimensions, see page 22.

145 1005

QTY

| 6 |  |
| --- | --- |

QTY

| 6 |  |
| --- | --- |

QTY

| 5 |  |
| --- | --- |

QTYVD-12

|  | |
| --- | --- |
| 5  4  1 |  |

7

| 5 |  |
| --- | --- |

1150 2

| 1248 | | A  63° | |
| --- | --- | --- | --- |
|  | |
| 5  4  1 |  |  |
|  | 1271 |

VD-13 VD-14

23

QTY

| 2 |  |
| --- | --- |

|  | 942 | A  63° | |
| --- | --- | --- | --- |
|  | |  |
| 5  4  1 |  |  |
| 965 | |

QTY

23

| 2 |  |
| --- | --- |

| 23 A  63°    5  4 |
| --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC19 |
| --- |

© Avrame LLC

|  |  | A23  63° | |
| --- | --- | --- | --- |
| 5  4  1 |  |  |
| 659 | |

VD-15

4. Cut ListQTY

| 2 |  |
| --- | --- |

|  |  | A  63° | |
| --- | --- | --- | --- |
| 5  4  1 |  |  |
| 354 | |

VD-16

QTY

| 2 |  |
| --- | --- |

| 23 A  63°    5  4 |
| --- |

129 2910 74VD-17

QTY

| 2 |  |
| --- | --- |

5 4

1

63°

3113

For these dimensions, see page 23.

SB-1

| 5  4  1 |  |
| --- | --- |

2400

QTY

| 3 |  |
| --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC20 |
| --- |

© Avrame LLC

4. Cut List

4.4. SD-6 detail tip cut template

Please check with ruler that measurements haven't changed, after printing.

89

S~~D-6~~

Detail continues. Do not cut!

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC21 |
| --- |

© Avrame LLC

4. Cut List4.5. VD-11 detail tip cut template

Please check with ruler that measurements haven't changed, after printing.

126

~~VD-11~~

~~145~~

Detail continues. Do not cut!

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC22 |
| --- |

© Avrame LLC

4. Cut List

4.6. VD-17 detail tip cut template

Please check with ruler that measurements haven't changed, after printing.

89

~~90~~~~°~~

~~V~~D~~-17~~

~~145~~

Detail continues. Do not cut!

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC23 |
| --- |

© Avrame LLC

5. Foundation

This guide does not include instructions how to build a foundation. Check your local requirements for tiny houses, some areas may have special restrictions for foundations.

For SOLO+ we recommend post, stripe or screw foundation, but please keep in mind: • Use a foundation solution that is appropriate for your location. • Build the foundation below the freezing point.

• Use hydro-isolation stripes under the sill beams.

• Build water and sewage interconnect with foundation

Post Foundation

As the name suggests, a post foundation consists

of concrete piers that are set deep into the ground

to bear the weight of the structure. Tiny house

builders often choose to use post foundations

because it’s easy to build and is less expensive

than other choices. This type of foundation is best

suited for smaller buildings, but less ideal in areas

where earthquakes or hurricanes are common.

Also, homes that sit top post foundation are more

susceptible to developing sagging and creaking

floors.

Screw Pile Foundation

When it comes to screw pile foundations, there 

are piles that are screwed into the ground.

There is no excavating of dirt required. A pile is

essentially a large screw that holds the

foundation of a structure on top of it.

Stripe Foundation

Stripe foundations are one of the most commonly used

foundations. They are generally used for ground where the

subsoil is of a good bearing capacity. Stripe foundations are

designed for structures where the load is relatively modest,

such as, low-to-medium rise domestic buildings. The

traditional form of most house construction allows for the

use of stripe foundations. Strip foundations consist of a

continuous stripe of concrete formed centrally under load

bearing walls. The continuous strip acts as support for

which walls are built and is to a width to spread the load

evenly of the building on the ground underneath it,

supporting it.

If you’re still unsure about which foundations you can use for supporting a wall structure, speak to an engineer.

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC24 |
| --- |

© Avrame LLC

- ~~Concrete Post 200x200 mm~~ or~~- Concrete Post Ø200 mm~~

or~~- Screw Pile Foundation~~

5. Foundation

5.1. Post foundation plan with measurements4506

|  |
| --- |

|  |
| --- |

|  |
| --- |
|  |

0

0

2

3

3

3

6

3

1

6

1

|  |
| --- |

|  |
| --- |

|  |
| --- |
|  |

3

3

3

3

4

6

1

1

|  |
| --- |

|  |
| --- |

|  |
| --- |
|  |

0

0

2

4

4

3

3

4

6

1

1

0

|  |
| --- |

|  |
| --- |

|  | |
| --- | --- |
|  |  |

0

0

0

0

0

2

1

4

4

3

3

4

6

1

1

|  |
| --- |

|  |
| --- |
|  |

0

0

2

3

3

3

3

4

6

1

1

|  |
| --- |

|  |
| --- |

|  |
| --- |
|  |

0

0

2

3

3

3

3

4

6

1

1

|  |
| --- |

|  |
| --- |

|  |
| --- |
|  |

0

0

2

200 1953 200 1953 200

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC25 |
| --- |

© Avrame LLC

5. Foundation

5.2. Sill beams plan with measurements 90 2063 90 2063 900 2153 4306

SD-1

SD-1

SD-1 SD-1

Impregnated

Impregnated

Impregnated Impregnated

SD-1

0 0

SD-1

Impregnated

Impregnated

0

5

| s  m  a  e  b  l  l  i  S  .  2  .  5 | s  t  n  e  m  m  o  C  e  p  y  T | d  e  t  a  n  g  e  r  p  m  I |
| --- | --- | --- |
| t  n  u  o  C | 2  1 |
| h  t  g  n  e  L  t  u  C | 0  0  0  5 |
| n  o  i  t  p  i  r  c  s  e  D | s  m  a  e  b  l  l  i  S |
| e  p  y  T | 1  -  D  S |

SD-1

SD-1

Impregnated

Impregnated SD-1

SD-1

SD-1

SD-1

Impregnated

Impregnated

Impregnated

Impregnated

0

0

0

5

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC26 |
| --- |

© Avrame LLC

5. Foundation

5.3. Connecting sill beams

Connect angle connectors with concrete posts

A

1. Build 15 concrete posts with minimal cross-section

200x200 mm or Ø200 mm diameter if rounded.

2. Between angle connectors and concrete post add

hydro-isolation (e.g. bitumen).

3. Use angle connectors for a timber structure

94x50x50x3 mm and connect these with 10x120

mm concrete screws to the concrete posts.

Angle connector

94x50x50x3 mm

200

|  |
| --- |
|  |

Hydroisolation

5 5

0

0

0

9

2

Concrete screw

10x120 mm

5

5

Top view

Connect sillbeams with angle connectors B

Side view

1. Connect sill beams (SD-1 & SD-2) with 3,4x90 mm nails, 3 pcs top to each other with 250 mm gap.

2. Lay nailed sill beams between connectors and fasten with M10x120 mm bolt and M10x25 washer and M10 nut.

Washer M10x25

Nut M10

Bolt M10x120 mm

SD-1 and SD-2

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |

|  |
| --- |

5 5

Top view

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |
|  |  |  |  |
|  |  |  |
|  |  |  |

0

0

02

|  |
| --- |

9

nails 3x 3,4x90 mm

Washer M10x25Nut M10

5 5

cc 250 mm

Bolt M10x120 mm

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC27 |
| --- |

© Avrame LLC

5. Foundation

5.4. Foundation & sill beams 3D view

SD-1

Impregnated

SD-1 

Impregnated

SD-1

Impregnated

SD-1

Impregnated

SD-1

Impregnated

SD-1

Impregnated

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC28 |
| --- |

© Avrame LLC 

6. Subfloor

6.1. Subloor sleepers plan with measurements

4396

52 4396 52 SD-2~~SD-2~~

|  |
| --- |
| ImpregnatedImpregnated |

5

4

1

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

5

5

5

| Impregnated |
| --- |

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
| Impregnated | | | | |

0

0

6

9

9

7

4

4

4

2

4

4

0

4

6

0

SD-2

3

6

Impregnated

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

4

5

4

5

0

4

| SD-2 |
| --- |
|  |
| Impregnated |

3

5

4

1

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

4

5

4

4

4

4

Impregnated 2

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |
|  |  |  |
|  |  |  |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |
|  |  |
|  |  |

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |
|  |  |  |
|  |  |  |

99

| s  r  e  p  e  e  l  s  r  o  o  l  f  b  u  S  .  1  .  6 | s  t  n  e  m  m  o  C  e  p  y  T | d  e  t  a  n  g  e  r  p  m  I |
| --- | --- | --- |
| h  t  g  n  e  L  t  u  C | 0  0  5  4 |
| t  n  u  o  C | 2  2 |
| n  o  i  t  p  i  r  c  s  e  D | r  e  p  e  e  l  s  r  o  o  l  f  b  u  S |
| e  p  y  T | 2  -  D  S |

4

9

5

SD-2

1

6

| Impregnated |
| --- |

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |  |  |
| Impregnated | | | | |

5

4

0

3

0

1

6

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

5

4

0

7

0

6

| Impregnated | |
| --- | --- |
|  |  |
|  |  |

5

4

1

0

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |

1

5

1

5

9

4

| Impregnated |
| --- |

4

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

6

5

5

4

4

4

7

| Impregnated |
| --- |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |
|  |

1

0

1

7

0

SD-2

3

6

Impregnated

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1

1

0

1

0

3

6

| Impregnated |
| --- |
|  |
|  |

5

4

1

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

6

5

6

5

3

4

| Impregnated |
| --- |
|  |

2

1

0

1

SD-2

9

0

1

6

| Impregnated |
| --- |

|  | SD-2 |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1

1

0

3

0

2

1

6

2

| Impregnated |
| --- |

:

l

a

t

o

1

t

6

1

SD-2

d

6

7

n

a

r

G

~~SD-2~~

5

| Impregnated |
| --- |
| Impregnated |
|  |

5

4

1

0

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC29 |
| --- |

© Avrame LLC

6.2. Attaching the subfloor sleepers

1. Measure locations of details SD-2 (see drawing with measurements). 2. Attach details SD-2 to the details SD1with four screws on each joint. Every joint needs 4 screws.

~~screw 5,0x100 mm~~

6. Subfloor

screw 5,0x100

SD-2

SD-2 5

Impregnated

4

mm

1

Impregnated

4 pc

every beam

needs 12

screws

|  |
| --- |

|  |
| --- |

4 pc

every beam needs 12 screws

SD-2 

5

Impregnated

4

1

6.3. Subfloor sleepers 3D view

SD-2

Impregnated SD-2

SD-2

Impregnated

Impregnated

SD-2

Impregnated

SD-2

Impregnated

SD-2 Impregnated SD-2 Impregnated

SD-2

SD-2

Impregnated

SD-2

Impregnated

SD-2

Impregnated

SD-2

Impregnated

Impregnated SD-2

Impregnated SD-2

Impregnated

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC30 |
| --- |

© Avrame LLC 

6. Subfloor

6.4. Installing the rodent wire mesh

1. Install rodent wire mesh ~~to~~

sleepers.

2. Overlap rodent wire mesh on

sides 300 mm.

NOTE! After You have installed

trusses, fix the overlapped rodent

wire mesh to A-Frame trusses.

Turn wire rodent mesh onto A-

Frame trusses and fix it with

staples.

NOTE! Do it after that You have

installed and fixed all A-Frame

trusses!

|  |
| --- |
|  |
|  |
|  |

|  | |
| --- | --- |
|  | |
|  |  |
|  | |
|  | |

5100

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC31 |
| --- |

© Avrame LLC

7. Subfloor OSB sheathing

7.1. OSB layout plan with measurements

4500

375 625 625 625 625 625 625375

| B  S  O  .  1  .  7 | e  m  u  l  o  V | ³  m    4  5  .  0 |
| --- | --- | --- |
| n  o  i  t  p  i  r  c  s  e  D | r  o  o  l  f  b  u  s |
| a  e  r  A | ²  m  0  0  .  5  4 |
| s  s  e  n  k  c  i  h  T  t  l  u  a  f  e  D | 2  1 |
| t  n  u  o  C | 2  3 |
| k  r  a  M  e  p  y  T | m  m  2  1  B  S  O |

³

m

4

5.

0

²

m

0

0.

54

0

00

01

0

0

5

2

0

0

5

2

0

0

5

2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

0

0

5

2

2

3

:

l

a

t

o

t

d

n

a

r

G

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC32 |
| --- |

© Avrame LLC

7.2. OSB installation

7. Subfloor OSB sheathing

1. Cut OSB sheets on right dimension. 

2. Measure OSB locations.

3. Fasten OSB sheets onto sleepers with 2,8x60 mm nails.

nail 2,8x60 mm

cc 200 mm

|  |  |  |  |  |  |  |  | |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | |  | |  |  | |  |  |
|  | | | |  | | | |  | | | | | |

SD-2

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Rodent wire mesh between OSB

Impregnated

and subfloor beams

|  |  |
| --- | --- |

7.3. Subfloor OSB 3D view 

OSB 12

mm

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC33 |
| --- |

© Avrame LLC

7. Subfloor OSB sheathing

7.4. Subfloor angle connectors plan with measurementsSD-3

Angle connectors3 pcs

94x50x50x3 mm

Angle connector screws

12 pcs 4,0x40 mm

| g  n  i  h  t  a  e  h  s  B  S  O  o  t  s  l  i  a  t  e  D  .  4  .  7 | h  t  g  n  e  L  t  u  C | 0  0  5  4 |
| --- | --- | --- |
| t  n  u  o  C | 4 |
| n  o  i  t  p  i  r  c  s  e  D | B  S  O  o  t  s  l  i  a  t  e  D |
| e  p  y  T | 3  -  D  S |

Angle connectors3 pcs94x50x50x3 mm

Angle connector screws

12 pcs 4,0x40 mm

4

:

l

a

t

o

t

SD-3

d

n

a

r

G

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC34 |
| --- |

© Avrame LLC

7. Subfloor OSB sheathing

SD-3

A~~ngle~~ conne~~ctor 1 pcs~~

~~90~~x90x65~~x3 mm~~

~~s~~cr~~ews 6~~ ~~pcs 4,0~~x40 ~~m~~m(~~hor~~i~~zontal)~~

~~s~~cr~~ews~~ 4 ~~pcs~~ 5~~,0~~x100 ~~m~~m(~~verti~~c~~al~~)

A~~ngle~~ conn~~ector 1 pcs~~

90x90x~~65x3 mm~~

scr~~ews~~ 6 ~~pcs 4,~~0x~~4~~0 ~~mm (hor~~i~~zon~~t~~al~~)

scr~~ews~~ 4 ~~pcs 5,~~0x100 ~~m~~m ~~(vertical~~)

SD-3

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC35 |
| --- |

© Avrame LLC

7. Subfloor OSB sheathing

7.5. Installing detail SD-4

Angle connectors 3 pcs

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  | |  |  |  |
|  |  | | | |  |

94x50x50x3 mm

SD-3

Angle connector screws

12 pcs 4,0x40 mm

SD-2

SD-2

Impregnated

Impregnated

Angle connector 1 pc

90x90x65x3 mm

screws 6 pcs 4,0x40 mm (horizontal)SD-3 SD-3

|  |  |
| --- | --- |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |
|  | |

screws 4 pcs 5,0x100 mm (vertical)

SD-2

Impregnated

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | |  |  |  |  |  |
|  | | | |  |  | |
|  | | |  |  |  |  |
|  | | |  |  |  |
|  | | |  |  |  |
|  | | |  |  |  |
|  | | |  |  |  |
|  | | | |  |  |  |
|  | | | |  |  |  |
|  | | | |  |  |  |
|  | | | | | | |
|  | | | | | | |
|  | | | | | | |
|  | | | | | | |
|  | | | | | | |
|  | | | | | | |

SD-2

Impregnated

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC36 |
| --- |

© Avrame LLC

7. Subfloor OSB sheathing7.6. Subfloor 3D view

SD-3

SD-3

SD-3

SD-3

SD-3SD-3

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC37 |
| --- |

© Avrame LLC 

8. A-frame Trusses

SOLO+100 has 4 different A-Frame trusses:

• 10 pcs of A-Frame truss F-1

• 2 pcs of A-Frame truss F-1.1 (structure is similar like F-1, but one detail is different)

• 3 pcs of A-Frame truss F-1.2 (half A-Frame truss for dormer area) • 2 pcs of A-Frame truss F-2

NOTE! Trusses must be fixed with temporary diagonal boards. Fix diagonal boards inside of house. You can remove them after You are installed OSB

sheets onto roof.

A-Frame truss F-2

A-Frame truss F-1

A-Frame truss F-1.1

A-Frame truss F-1.2

A-Frame truss F-1.1 A-Frame truss F-1 A-Frame truss F-2 

~~Description Count Cut Length~~ ~~Truss F-1 detail 12 4500 Truss F-1 detail 3 4500 Truss F-1 detail 27 5085 Truss F-1 detail 3 2333 Truss F-1 detail 22 1393 Truss F-1 detail 14 2266 Truss F-1 detail 3 2144~~ ~~Truss F-1 detail 4 1219~~Temporary boards

| Details For A-frame trusses | | | |
| --- | --- | --- | --- |
| Type |  |  |  |
| SD-5 |  |  |  |
| SD-5.1 |  |  |  |
| SD-6 |  |  |  |
| SD-6.1 |  |  |  |
| SD-7 |  |  |  |
| SD-8 |  |  |  |
| SD-8.1 |  |  |  |
| VD-1.1 |  |  |  |

Grand total: 88

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC38 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.1. A-frame F-1 truss with measurements

Page 40, A

3

3

Build 10 pcs.

3

2

5

SD-6 SD-6

5

7

1

Page 41, E

3

61

| 5 |
| --- |

| 4  1 |
| --- |

SD-8

Page 41, D

0 6

4

2

2

|  |
| --- |
|  |
|  |
|  |
|  |

9

1

2

SD-7

SD-7

Page 40, B and C

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

63° 63°SD-5

|  | 5 |  | |
| --- | --- | --- | --- |
| 4 | |  |  |

1

565 145 3080 145565

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC39 |
| --- |

© Avrame LLC

~~nail plate 100x200 mm~~

8. A-frame Trusses

8.2. Assemble the A-frame F-1 truss

Connecting details SD-6 (UP)

A

1. Connect two details SD-6 with nail plate.

2. Nail plate is only on one side.

screws 4,0x40 mm, 12 pc

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |
|  |  |
|  |  |
|  |  |
|  |  |

SD-6 SD-6

~~1~~45~~1~~4~~5~~

~~nail plate 100x200 mm~~

Connecting details SD-5 and SD-6

B

1. Connect SD-5 and SD-6 with nails 3,4x90 mm.

2. Pay attention to nailing distance to wooden edges.

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

SD-7 SD-6

Connecting details SD-5 and SD-7

C

1. Connect SD-5 and SD-7 with nail plate.

|  |  |  |  | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | |  | C | SD-5 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  | |  |  |
|  |  |  |  | |  |  |  |
|  | | |  | |  |  |  |
|  |  | |  |  |  | |  |
|  |  |  |  | |  |  |  |

~~B~~

3535

|  |  |
| --- | --- |

5

3

5

3

|  |  |  |
| --- | --- | --- |

screws 4,0x40 mm, 12 pc

|  | | | | |
| --- | --- | --- | --- | --- |

5

3

nail 3,4x90 mm

8 pc

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC40 |
| --- |

© Avrame LLC

Connecting details SD-6 and SD-7 D

1. Connect details SD-6 and SD-7 with nails 3,4x90 mm.

2. Pay attention to nailing distance to wooden edges.

8. A-frame Trusses

37 3746

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  | |
|  |  | |
|  |  |  |

4

2

1

5 3

5 3

|  |
| --- |

nail 3,4x90 mm

5

3

15 pc

5 3

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
| 145 |
|  |
|  |

SD-6

Connecting details SD-6 and SD-8 E

SD-7 1~~4~~~~5~~

1. Connect detail SD-6 on SD-8 with 12 nails. 2. Pay attention to nailing distance to wooden edges. ~~1~~4~~5~~

SD-6

nail 3,4x90 mm

12 pc

SD-8

5

3

|  |  |
| --- | --- |
|  |  |
|  |  |

53

5 4

| 1 |
| --- |
|  |

5

3

| 35 | 35 | 64 |
| --- | --- | --- |
|  |  |  |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC41 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.3. A-frame F-1 truss 3D view

Build 10 pcs of truss F-1.

SD-8 ~~SD-6~~

SD-6

SD-7

SD-7

SD-5

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC42 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.4. A-frame F-1.1 truss with measurements

Page 40, A

Build 2 pcs.

3

3

3

2

9

7

0

2

SD-6

SD-6

Page 41, E

SD-8

3

61

|  |  |
| --- | --- |
|  |  |
|  | |

5 4

1

Page 44

1

6

4

2

2 9

1

2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |
|  |  | VD-1.1 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  | ~~Pag~~e 40, B |
|  |  |  |  |  | VD-1.1 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  | SD-5 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  | 5 |  |  |  |  |  |  |
|  |  |  |  |  | |  |  | | |
|  |  | 4 | |  | |  |  | | |

1

565 145 3080 145565

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC43 |
| --- |

© Avrame LLC

~~nail plate 100x200 mm~~

8. A-frame Trusses

8.5. Assemble the A-frame F-1.1 truss

1. Connect SD-5 and VD-1.1 with nails 3,4x90 mm. 2. Connect VD-1.1 and SD-6 with nail plate.

screws 4,0x40 mm, 14 pc

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

SD-6

Dormer side

VD-1.1

| ~~1~~45 |
| --- |

~~1~~45

nails 3,4x90 mm

12 pc

35 ~~35 35 40~~

SD-5

|  |  |  |
| --- | --- | --- |
|  |  |  |

| 5  3 |  |  |  | |
| --- | --- | --- | --- | --- |
|  |  |  |
| 5 |  |  |
| 3 |  |  |
| 5  3 |  |  |
| 0 |  |  |
| 4 |  |  |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC44 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.6. A-frame F-1.1 truss 3D view

Build 2 pcs of A-Frame truss F-1.1

SD-6 

SD-8

SD-6

~~V~~D-1.1

SD-5 

VD-1.1

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC45 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.7. A-frame F-1.2 truss with measurements

Page 40, A

Build 3 pcs.

|  |
| --- |
|  |
|  |

2

3

9

7

0

2

SD-6.1

SD-6

Page 47

Page 41, E

SD-8.1

|  |
| --- |

This side of detail

|  |  | 5 |  |
| --- | --- | --- | --- |
|  | | |  |
| 4 | | |  |

SD-6.1 is fixed onto

1

support beam.

This side of detail

SD-8.1 is installed

onto support beam.

NOTE! Be careful, lifting A-Frame trusses F-1.2.

At least two people are needed to lift the A-frame truss F-1.2.

Page 41, D

2

6

2

2 9

0

1

2

Page 40, B and C

SD-7

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

SD-5.1

|  | 5 |  |  | |
| --- | --- | --- | --- | --- |
|  | |  | | |
| 4 | |  | |  |

1

3790 145565

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC46 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.8. Assemble the A-frame F-1.2 truss 145 

Angle connector 40x40x40x3

SD-6.1

angle connector screw

8 pcs 4,0x40 mm

SD-8.1

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  | |  |
| 5 | |  |
| 4 | |  |
| 1 | |  |
|  | |  |

8.9. A-frame F-1.2 truss 3D view

SD-6

SD-6.1

SD-8.1

NOTE! Be careful, lifting A-Frame trusses F-1.2. At least two people are needed to lift the A-frame truss F-1.2. 

SD-7

SD-5.1

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC47 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.10. A-frame F-2 truss 3D view

A-Frame truss F-2



| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC48 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.11. A-frame F-2 truss details

Build 2 A-Frame

F-2 trusses

SD-15

SD-14 

SD-15

SD-14

SD-17

SD-15

SD-12

SD-17

SD-12

SD-11

SD-10

SD-10

SD-15

SD-9

SD-15 SD-16 SD-12 SD-13

SD-15 SD-9

SD-16

SD-10 

SD-15

SD-10

SD-13

SD-12

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC49 |
| --- |

© Avrame LLC

8. A-frame Trusses

8.12. A-frame F-2 truss with measurements Page 51, A

Build 2 A-Frame F-2 trusses

SD-15

0 0

SD-14 SD-14

5

1

SD-15

30

4

2

0

0

9

SD-17 SD-17 SD-15

SD-12

|  |
| --- |

SD-12

Page 51, B

0

0

5

5

4

4

0 0

3

~~Description Count Cut Length~~

~~Truss F-2 4 4956~~

0

0

0

~~Truss F-2 4 2152~~

0 299 758 ~~1358 1816 2160~~  ~~Truss F-2 2 2206~~

~~Truss F-2 8 676~~

SD-11

~~Truss F-2 4 1540~~

SD-9

SD-10 ~~SD-10~~

SD-9

~~Truss F-2 4 1575~~  ~~Truss F-2 14 555~~

SD-15

SD-15

~~Truss F-2 4 395~~  ~~Truss F-2 4 413~~

5

5

3

3

3

3

38

1

1

SD-13

4

2

SD-13

2 5

1

2

SD-16 SD-15 SD-12

SD-15SD-16

SD-12

1630

5 3

4

0 2

3

0 0

5 3

4

0

2

3

0 0

0 350 790 1390 3065 366541054500

| 8.12. Details for A-frame trusses F-2 | | | |
| --- | --- | --- | --- |
| Type |  |  |  |
| SD-9 |  |  |  |
| SD-10 |  |  |  |
| SD-11 |  |  |  |
| SD-12 |  |  |  |
| SD-13 |  |  |  |
| SD-14 |  |  |  |
| SD-15 |  |  |  |
| SD-16 |  |  |  |
| SD-17 |  |  |  |

Grand total: 48

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC50 |
| --- |

© Avrame LLC

~~screw 5,0x100 mm~~

8. A-frame Trusses

8.13. Assemble the A-frame F-2 truss

Connecting details SD-9 (UP)

A

1. Connect two details SD-9 with screws 5,0x100 mm.

2. Use 4 screws, 2 screws for each detail.

4 pc

9

~~screw 5,0x100 mm~~ 

7

screw 5,0x100 mm SD-9

SD-9 SD-9

SD-9

Connecting details (posts, horizontal B

~~4~~5 4~~5~~

1. Connect all details of A-Frame truss F-2 like shown

on drawing.

2. All joints need at least 2 screws, 5,0x100 mm.

3. Every detail must be fixed with 4 screws.

SD-14

2 pc 

SD-9

SD-17

SD-15

SD-12

SD-11

SD-10

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC51 |
| --- |

© Avrame LLC

9. Support Beam

9.1. Assemble the support beam

1. Use details SB-1 (3 pc).

2. Nail details SB-1 on each other with nails 3,4x90 mm.

3. Follow the nail steps on the drawing.

100 200 200 200 200 200 200 200 200 200 200200100

5

5

4

4

1

0

5

4

35

|  | | | | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |  |  |  |

5

|  |  |
| --- | --- |

|  |  |  |
| --- | --- | --- |

90

130 200 200 200 200 200 200 200 200 200 20020070

3

3

2400 28

28

~~D~~escription Count Cut Length Suppo~~r~~t beam 3 2400 SB-1SB-1SB-1 

| 9.1. Details for support beam building | | | |
| --- | --- | --- | --- |
| Type |  |  |  |
| SB-1 |  |  |  |

Grand total: 3

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC52 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.1. Installing A-frame F-1 trusses

A-Frame trusses

F-1.2 are

mirrored 

temporary diagonal

boards

NOTE! Dormer side! 

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC53 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.2. A-frame F-1 trusses layout plan with measurements

Install A-Frame trusses F-1 (10pcs) and F-1.1(2 pcs).

NOTE! Measure SB-1 beam location.

0

9

7

|  | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  | |
|  |  |  |  |  |  |  |  |  |

0

0

6

|  |  |  |  |  |  |  |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

0

0

6

|  |  |  |  |  |  |  |  | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

0

0

6

0

0

Truss F-1Truss F-1Truss F-1Truss F-1

angle connector 94x50x50x3

2 connectors for every truss

5

SB-1 location

|  | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  |  |  |  |  |  | |
|  |  |  |  |  |  |  |  |  |  |

|  |
| --- |

Truss F-1.1

0

A-Frame trusses F-1.1 are

1

3

2

0

1

5

4

6

6

7

3

6

6

1

3

6

6

5

2

6

6

9

1

6

6

3

1

6

6

7

|  |
| --- |

|  | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | |
|  | | | | | | | | |
|  |  |  |  |  |  |  |  | |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  | | | | | |  |
|  | | | | | | | | | |
|  | | | | | | | | | |
|  | | |  |  |  |  |  | | |
|  |  |  |  |  |  |  |  |  |  |

|  | |  |  |  |  |  | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |

|  | |  |  |  |  |  | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |

|  | | |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

mirrored

Truss F-1.1

Truss F-1

Truss F-1

Truss F-1

Truss F-1

Truss F-1

Truss F-1

angle connector 94x50x50x3

2 connectors for every truss

0

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC54 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.3. Connecting A-frame F-1 trusses to underfloor

angle connector 94x50x50x3 mm

| SD-6 |  |  |  |  |  | angle connector screw 4,0x40 mm8 pc  screw 5,0x100 mm |
| --- | --- | --- | --- | --- | --- | --- |
| SD-6 |  |  |  |  |  |  |
|  |  |  |  |  |  | 4 pc |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | |  | | |  |
|  |  | |  |  |  | |
|  |  | |  |
|  |  | |  |  |  |  |
|  | | |  |  |  |  |
|  | | |  |  |  |  |

Impregnated

SD-2

SD-1

Impregnated

|  |
| --- |

NOTE! Every truss must be located above the detail SD-2!

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC55 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.4. Installing details VD-1 and VD-2

1. Measure the distance between A-Frame trusses F-1.1.

2. Install details VD-1 on the dormer side to the A-Frame truss F-1.1, fix details with nails 3,4x90 mm.3. Install details VD-2 on the dormer side to the A-Frame truss F-1.1, fix details with nails 3,4x90 mm.4. Fix angle connectors as shown on 3d picture and on the next page.

A-Frame trusses 

F-1.1 are mirrored

VD-2

Description Count Cut Length Support beam install detail 2 1074 

VD-1 VD-2

Support beam install detail 2 2484 VD-1

| 10.4. Details for support beam installing | | | |
| --- | --- | --- | --- |
| Type |  |  |  |
| VD-1 |  |  |  |
| VD-2 |  |  |  |

Grand total: 4

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC56 |
| --- |

© Avrame LLC

~~screw 5,0x100 mm~~

10. Installing A-Frames

10.5. Connecting details for Support Beam

1. Install details VD-1 on the dormer side to the A-Frame truss F-1.1, fix details with nails 3,4x90 mm.2. Install details VD-2 on the dormer side to the A-Frame truss F-1.1, fix details with nails 3,4x90 mm.3. Fix angle connectors 90x90x65x3

VD-1 nail 3,4x90 mm~~2 pcs cc 200 mm~~angle connector 90x90x65x3 mm

SD-6

|  |
| --- |

|  |
| --- |
|  |

4 pcs

SD-8

VD-2

|  |
| --- |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |
|  |

|  | | |
| --- | --- | --- |
|  | | |
|  | | |
|  | | |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC57 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.6. Connecting the Support Beam

1. Lift support beam onto details VD-2 and angle connectors.

2. Measure location of support beam.

3. Fix support beam with angle connector screws 4,0x40 mm.

|  |  |  | |  | |  | |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | |  | |  | |
|  |  |  | |  | |  | |
|  |  |  | |  | |  | |
|  |  |  | |  | |  | |  |
|  |  |  | |  | |  | |  |
|  |  |  | |  | |  | |  |
|  |  | |  |  |  | |  |  |
|  |  | |  |  |  |  |
|  |  |  | | |  |  |  |  |
|  |  |  | | |  |  |  |  |
|  |  |  | | |  |  |  |  |
|  |  |  | | |  |  |  |  |

28 

Support beam

~~a~~ngle connector

90x90x65x3 mm

A-Frame trusses

angle connector screw 6

F-1.1

pcs

Support beam

VD-2

angle connector 90x90x65x3 mm screw 4,0x40 mm 

6 pcs

Fix screws to support beam (vertical).

VD-2

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC58 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.7. Installing A-frame F-1.2 trusses

A-Frame trusses F-1.2



| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC59 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.8. A-frame F-1.2 trusses layout plan with measurements

|  | | | | | |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |

|  |  | | | |  |  | |  | |  |  | | | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | | |  |  | |  | |  |  | | | |  | | |
|  |  |  | |  | |  |  | | | |  | | |
|  |  | | | |  |  | |  | |  |  | | | |  | | |
|  | | | |  |  | |  | |  |  | | | |  | | |
|  | | | |  |  | |  | |  |  | | | |  | | |
|  |  | |  | |  |  | | | |  | | |

0

1

3

2

8

7

5

Truss F-1.2

0

1

7

1

0

0

6

Truss F-1.2

0

1

1

1

0

0

6

Truss F-1.2

0

1

5

3

3

5

0

angle connector

94x50x50x3

2 connectors

for every truss

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC60 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.9. Connecting A-frame F-1.2 trusses to underfloor

1. Measure A-Frame trusses F-1.2 locations.

2. Lift A-Frame trusses onto support beam.

3. Fix A-Frame trusses onto foundation with angle connectors and screws. 4. Fix A-Frame trusses onto support beam with screws (3 screws to each truss).

angle connector 94x50x50x3 mm

| SD-6 |  |  |  |  |  | angle connector screw 4,0x40 mm8 pc  screw 5,0x100 mm |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  | 4 pc |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  | |  | | |  |
|  |  | |  |  |  | |
|  |  | |  |
|  |  | |  |  |  |  |
|  | | |  |  |  |  |
|  | | |  |  |  |  |

Impregnated

SD-5.1

SD-2

SD-1

Impregnated

|  |
| --- |

SD-6.1

screw 5,0x100 mm

|  |
| --- |

|  |
| --- |
|  |

|  |
| --- |
|  |
|  |
|  |

SD-8.1

SB-1

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC61 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.10. Installing A-frame F-2 trusses

A-Frame truss F-2



| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC62 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.11. Installing the A-frame F-2 trusses to SD-4

1. Lift A-Frame truss onto

details SD-3.

2. Fix A-Frame truss F-2 onto

details SD-3 as shown on

joint (next page).

SD-3

Page 64

|  |  | |
| --- | --- | --- |
|  |  |  |
|  | | |
|  | | |

|  |  |
| --- | --- |
|  |  |
|  |  |

|  |
| --- |

|  |  |
| --- | --- |
|  |  |
|  |  |

|  |
| --- |

|  |  |
| --- | --- |
|  |  |
|  |  |

|  |
| --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC63 |
| --- |

© Avrame LLC

~~screw 4x40 mm 8 pcs~~

10. Installing A-Frames

10.12. Connecting the A-frame F-2 trusses

the detail.~~screw 5,0x100 mm~~

SD-9

SD-15

~~screw 4x40 mm~~

SD-13

SD-12

SD-16

nail plate 40x160 mm

Nailingplate must be

fixed on both sides of

SD-3

|  |  |
| --- | --- |
|  |  |

2 pcs

|  |  | | |  |
| --- | --- | --- | --- | --- |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  |  | | |  |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  | | |
|  |  |  |
|  |  |
|  |
|  |  |
|  |  |  |  |  |
|  |  |  |  |

Truss F-2

nail plate 40x160 mm 8 pcs

SD-3 SD-3

|  |  |  |
| --- | --- | --- |
|  |  |
|  | | |
|  | | |
|  | | |

|  |
| --- |
|  |
|  |

SD-2 Impregnated

SD-1 Impregnated

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC64 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.13. Details SD-4 and SD-8

SD-8 

Screw 5,0x100

mm

Angle connector 1 pcs

90x90x65x3 mm

screws 4 pcs 5,0x100

mm (horizontal)

screws 4 pcs 5,0x100 

mm (vertical)

SD-4

Angle connector 1 pcs

90x90x65x3 mm

screws 4 pcs 5,0x100 mm (horizontal)

screws 6 pcs 4,0x40 mm (vertical)

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC65 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.14. Details SD-4 & SD-8 plan with measurements

Page 67, A

SD-8

Installataion

2

height of detail

9

1

SD-8. 2

Page 67, B

SD-4

|  |  |  |  |
| --- | --- | --- | --- |

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC66 |
| --- |

© Avrame LLC

10. Installing A-Frames

10.15. Connecting details SD-4 and SD-8 onto A-Frame truss F-2

Connecting details SD-8

A

1. Fix detail SD-8 with screws 5,0x100 mm to A-Frame

truss F-2 (loft side, see architectural drawing).

2. 2 screws to each detail of A-Frame truss F-2 (see next page).

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |
|  |  |
|  |
|  |
|  |  |
|  |
|  |
|  |  |
|  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

A-Frame truss F-2

SD-8

screw 5,0x100 mm

2 pc

Connecting details SD-4

B

1. Fix detail SD-4 with 3 angle connector and screws

5,0x100 mm and 4,0x40 mm to A-Frame truss F-2.2. Angle connectors need different type screws vertical and horizontal placing.

|  |  |  |  |  |  | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  |  | | |
|  |  |  | SD-4 |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | | |
|  | | |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  |  |  |  |  |  | | |
|  |  | | | | |  | | |

Angle connector 1 pcs

90x90x65x3 mm

screws 4 pcs 5,0x100 mm

(horizontal)

screws 4 pcs 5,0x100 mm

(vertical)

|  | |
| --- | --- |
|  | |
|  | |
|  |  |

NOTE! Install insulation also into this area!

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC67 |
| --- |

© Avrame LLC

11. Dormer

11.1. Installing detail VD-3

angle connector 90x90x65x3

screws 4,0x40 mm 5 pcs



VD-3

screw 5,0x100 mm

SD-5.1

angle connector 90x90x65x3

screws 5,0x100 mm

5 pcs

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC68 |
| --- |

© Avrame LLC

11. Dormer11.2. Dormer plan with measurements

VD-4

Page 70, A

90 2310 90

VD-9

VD-10

VD-7 VD-9

0

0

0

0

5

8

8

1

5

5

1

7

3

930 9

1

VD-6 ~~VD-6~~

~~V~~D-6

Type Descriptio~~n Count Cut Length~~ Dormer deta~~il 1 2490~~

VD-7 ~~V~~D-6

~~V~~D-6

Dormer deta~~il 2 2174~~

Dormer deta~~il 5 2174~~

Dormer deta~~il 2 930~~

9

Dormer deta~~il 1 1154~~

4

~~V~~D-8

1

1

Dormer deta~~il 6 443~~ Dormer deta~~il 6 270~~

VD-9

Page 70, B

VD-10

VD-9

0

0

0

0

0

0

5

6

5

5

5

VD-9

6

6

5

5

VD-9

0

0

0

0

0

0 488 975 1463 195022652310

| 11.2. Dormer details | | | |
| --- | --- | --- | --- |
|  |  |  |  |
| VD-4 |  |  |  |
| VD-5 |  |  |  |
| VD-6 |  |  |  |
| VD-7 |  |  |  |
| VD-8 |  |  |  |
| VD-9 |  |  |  |
| VD-10 |  |  |  |

Grand total: 23

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC69 |
| --- |

© Avrame LLC

11. Dormer

11.3. Connecting dormer details

Connecting dormer details

A

1. Connect dormer details with 5,0x100 mm screws.

2. Every joint need 2 screws. 3. Every details need at least 4 screws.

|  | |  |
| --- | --- | --- |
|  | |  |
|  |  |  |

|  |  | VD-4  VD-6  9  2  3  VD-10 | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  |
|  |  |  |  |
|  |  |  |
|  |  |  |
| VD-7 |  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  | |  |  |
|  |  | | |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

3

2

2

VD-6

~~V~~D-10

screw 5,0x100 mm

2 pcs

nail 3,4x90 mm

4 pcs

Connecting dormer details

B

1. Install angle connector to details VD-6.

2. Connect dormer details with 5,0x100 mm screws.

3. Every joint need 2 screws.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  | |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |
| VD-10 |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |
|  |  |  |  |
|  | 0 |  |  |
|  | 0 |  |  |
|  | 6 |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

nail 3,4x90 mm

4. Every details need at least 4 screws.

VD-9

4 pcs

~~V~~D-10

VD-6

screw 5,0x100 mm

2 pcs

angle connector

90x90x60x3 screws 4,0x40 mm

6 pcs

VD-6

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC70 |
| --- |

© Avrame LLC

11. Dormer

11.4. Installing dormer

1. Install dormer between A-Frame trusses and onto detail VD-1.

2. Fix dormer with 3 screws onto A-Frame truss on both sides.

3. Fix angle connectors onto detail VD-1and dormer.



screws 5,0x100 mm

3 pc

Angle connector screw

4,0x40 mm

6 pcs

screws 5,0x100 mm

3 pc

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC71 |
| --- |

© Avrame LLC

11. Dormer

11.5. Installing detail VD-5 onto Dormer

1. Install details VD-5 onto dormer and A-Frame truss.

2. Use screws 5,0x100 mm.

VD-5 

VD-5

screw 5,0x100 mm

2 pcs

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC72 |
| --- |

© Avrame LLC 

11. Dormer

11.6. Dormer roof details with measurements

1. Measure locations of details VD-12.

2. Install details VD-11 and VD-12 to connect SOLO+ 100 and dormer. Page 74

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

VD-11 VD-11 ~~VD-11 VD-11~~ VD-11VD-12 VD-12 VD-12 VD-12 VD-12~~0 555 1155 1755 2400~~

~~Type Description Count Cut Length~~  ~~Dormer roof 5 1317~~

~~Dormer roof 5 1150~~

|  |
| --- |

| 11.6. Dormer roof details | | | |
| --- | --- | --- | --- |
|  |  |  |  |
| VD-11 |  |  |  |
| VD-12 |  |  |  |

Grand total: 10

| VERSION DATE PROJECT PAGE NO1.1 12-DEC-21 Solo+ 100 METRIC73 |
| --- |

© Avrame LLC