

**SPECIFICATION****For****VAF-G**

300/500V 70 °C Copper Conductor PVC Insulated PVC Sheathed with Grounded Flat Type Cable

(300/500V, Cu /PVC/PVC)

BY

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CUSTOMER

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Customer Document	Rev.

**Remark:**

This document is based on the Customer Document for the structure and properties of electric wire and cable only. If there are different points, will be shown in deviation table.

## **1. Scope**

This specification covers 300/500V copper conductor polyvinyl chloride (PVC) insulated polyvinyl chloride (PVC) sheathed with grounded flat type cable

Maximum conductor temperature shall be 70°C

The cable shall be in accordance with TIS 11 Part 101-2553, Table 1.

Flame retardant test TIS 11 Part 2-2553 (Same IEC 60332-1 : 2015).

## **2. Conductor**

The conductor shall be solid and non-compacted concentric stranded uncoated annealed copper conductor in accordance with TIS 2427-2552, Class 1 and Class 2.

The direction of lay shall be left-hand (S) lay.

## **3. Insulation**

The insulation shall be polyvinyl chloride (PVC/C) compound meet the requirements of TIS 11 Part 101-2553.

The average thickness of the insulation shall be not less than that given in Table 1.

The minimum thickness shall not fall below the value in Table 1 by more than 10% plus 0.1 mm.

## **4. Laying Up**

The individual insulated conductor shall be laid up together.

## **5. Core Identification**

The cores shall be identified by colors, as follow :

2-cores+G : blue, brown, + green/yellow

## **6. Sheath**

The sheath shall be polyvinyl chloride (PVC/ST4) compound meet the requirements of TIS 11 Part 101-2553.


The average thickness of the sheath shall be not less than that given in Table 1.

The minimum thickness shall not fall below the value in Table 1 by more than 15% plus 0.1 mm.

The color of the sheath shall be white.

## 7. Marking on Cable

The marking items shall be marked with suitable mean throughout the length of cable.

1. Manufacturer's name and/or trade mark "  YAZAKI..... : TYE"
2. Designation "VAF-G"
3. Rated voltage "300/500V "
4. Insulation and sheath material "PVC/PVC"
5. Max. operating rated temperature at conductor "70°C"
6. Number of cores and size of conductor
7. TIS logo and standard number


## 8. Test and Properties

The cable shall be meet the requirement in Test and Inspection and Table 1, when tested in accordance with TIS 11 Part 5-2553 (Same IEC 60227-5 : 2003), TIS 2427-2552 (Same IEC 60228 : 2004) and TIS 11 Part 2-2553 (Same IEC 60332-1 : 2015).

## 9. Packing

The cable shall be coiled and wrapped with plastic which shall be overlapped and secured to provide the cable with physical protection during transportation and during ordinary storage and handling operation.

Each package shall be clearly marked as follows.

1. Rated voltage "300/500V"
2. Max. operating rated temperature at conductor "70°C"
3. Designation "VAF-G"
4. Number of cores and size of conductor
5. Cable length
6. Net and gross weight
7. Month and year of manufacture
8. Manufacturer's name and/or trade mark "  **YAZAKI** "

### Test and Inspection

#### **Sample Tests**

- Maximum conductor resistance, Ohm/km ..... specified in Table 1
- AC test voltage for 5 minutes, kV .....2
- Construction.....specified in Table 1

#### **Type Tests**

This cable shall be tested as followed :

- Insulation Resistance at 70 °C ..... specified in Table 1
- Flame retardant tested according to TIS 11 Part 2-2553 (Same IEC 60332-1)

#### **Definition concerning the tests**

**Routine tests:** Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

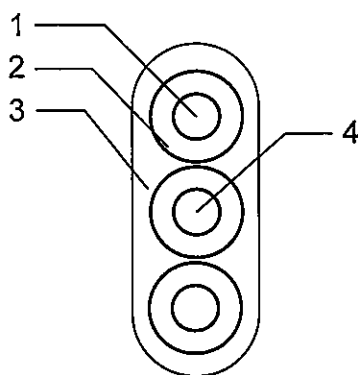
**Sample tests:** Tests made by the manufacturer on samples of completed cable or components taken from a completed cable, at a specified frequency, so as to verify that the finished product meets the specified requirements.

**Type tests:** Tests made before supplying, on a general commercial basis, a type of cable covered by this standard, in order to demonstrate satisfactory performance characteristics to meet the intended application.

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### Cable structure

Cross-sectional (Not scale)



No.	Structure	Material
1	Conductor	Solid and Non-compacted concentric stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/C)
3	Sheath	Polyvinyl chloride (PVC/ST4)
4	Ground	Copper conductor/PVC insulated

**Application:** For surface or above ceiling wiring or direct embedded in plaster, Maximum conductor temperature of 70°C for normal operation and 160°C for short circuit condition.

**Table 1**

No. of core and size (core x mm <sup>2</sup> )	Conductor			Insulation thickness nominal (mm)	Sheath thickness nominal (mm)	Overall diameter average (mm)		Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
	No. of wires (wires)	Type	Diameter approx. (mm)			Minimum	Maximum				
2+G x 1/1	1	Solid	1.13	0.6	0.9	4.0 x 8.4	4.7 x 9.8	18.1	0.0110	75	100/Coil
2+G x 1.5/1.5	1	Solid	1.38	0.7	0.9	4.4 x 9.8	5.4 x 11.5	12.1	0.0110	100	100/Coil
2+G x 2.5/2.5	1	Solid	1.78	0.8	1.0	5.2 x 11.5	6.2 x 13.5	7.41	0.0100	150	100/Coil
2+G x 4/4	7	Non-Compacted	2.55	0.8	1.1	5.8 x 13.4	7.4 x 16.5	4.61	0.0077	220	100/Coil
2+G x 6/6	7	Non-Compacted	3.12	0.8	1.1	6.4 x 15.0	8.0 x 18.0	3.08	0.0065	300	100/Coil
2+G x 10/10	7	Non-Compacted	4.05	1.0	1.2	7.8 x 19.0	9.6 x 22.5	1.83	0.0065	470	100/Coil
2+G x 16/16	7	Non-Compacted	5.10	1.0	1.3	9.0 x 22.0	11.0 x 26.5	1.15	0.0052	700	500

**Table 1 (continued)**

**FOR GROUNDED CONDUCTOR**

Size	Conductor		Insulation thickness nominal (mm)	Conductor resistance at 20 °C maximum (Ohm/km)
	No. of wires (wires)	Type Diameter approx. (mm)		
1	1	Solid 1.13	0.6	18.1
1.5	1	Solid 1.38	0.7	12.1
2.5	1	Solid 1.78	0.8	7.41
4	7	Non-Compacted 2.55	0.8	4.61
6	7	Non-Compacted 3.12	0.8	3.08
10	7	Non-Compacted 4.05	1.0	1.83
16	7	Non-Compacted 5.10	1.0	1.15