



FR 2016
Formula Rules 2016

An abstract graphic at the bottom of the page features several overlapping white and light grey rectangles of various heights and widths, creating a stepped, architectural effect. The year '2016' is printed in large, bold, black font over the right side of this graphic.

2016

Formula Rules (FR)

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Formula Rules (Main Contract)

Section 1

Use, Definitions and General Rules

- 1 These Rules are the Formula Rules referred to in paragraph C.1.1.1 of JCT Fluctuations Option C for:

<i>Title</i>	<i>Short Reference in these Rules</i>
Standard Building Contract 2016 Edition	
- With Quantities	SBC/Q
- Without Quantities	SBC/XQ
- With Approximate Quantities	SBC/AQ
Design and Build Contract 2016 Edition	DB

- 2 a References to Part I, Part II and Part III are references to those Parts in section 2 of these Rules. Rules 3 to 8 apply to adjustment under Part I, Part II and Part III of these Rules unless specifically excluded.
- b Part II does not apply to SBC/AQ.
- c Where in these Rules alternative terms separated by oblique strokes are used they shall apply as follows:

'Specification/Work Schedules' – for whichever document has been provided under SBC/XQ.

In 'Interim Valuation/Application for Interim Payment', 'Certificate/Application' and 'Final Certificate/Final Statement' the words before the oblique stroke apply to SBC/Q, SBC/XQ or SBC/AQ and those after the oblique stroke to DB.

In 'Contract Bills/Priced Document/Contract Sum Analysis' the words before the first oblique stroke apply to SBC/Q or SBC/AQ, those between the oblique strokes apply to SBC/XQ and those after the second oblique stroke to DB.

Definitions

- 3 In Fluctuations Option C (as defined hereunder) and in these Rules, the following definitions apply together with, as far as relevant and applicable, the definitions in the Conditions.

Application for Interim Payment: an Interim Payment Application referred to in DB, clause 4.7.

Balance of Adjustable Work: the work which is properly subject to Formula adjustment but which is neither allocated to a Work Category nor is Contractor's Specialist Work.

Notes:

1. Such Balance will include preliminary and general items, water, insurance, adjustments on the tender summary and similar matters.
2. Where specifically so stated in the Contract Documents it shall also include work undertaken by the Contractor which cannot be allocated to a Work Category.
3. For the treatment of Provisional Sums, see rule 16.
4. For work or items excluded from Formula adjustment see rule 4.

Base Month: the calendar month recorded in the Contract Particulars. *Note: unless tenderers are otherwise informed the Base Month will normally be the calendar month prior to that in which the tender is due to be returned.*

Certificate for Interim Payment: an Interim Certificate referred to in SBC/Q, SBC/XQ and SBC/AQ, clause 4.9.1.

Conditions: the Conditions of the relevant contract referred to in rule 1.

Contract Documents: as defined in the Conditions.

Contractor's Specialist Work: any work to be executed by the Contractor for which there is no Work Category (but see rule 7: structural steelwork) but for which one of the specialist engineering formulae in Part III of section 2 of these Rules is appropriate to adjust the price for that work.

Fluctuations Option C: JCT Fluctuations Option C (Formula adjustment) for use with SBC/Q, SBC/XQ, SBC/AQ or DB.

Formula adjustment: adjustment in accordance with relevant Fluctuations Option C and these Rules.

Index Number: the provisional or firm Index Number for the month for any of the indices published in the Monthly Bulletins. *Note: For Work Group Weighted Index Numbers, which are only used where Part II of section 2 of these Rules applies, see rule 34.*

Interim Valuation: a valuation for the purposes of SBC/Q, SBC/XQ or SBC/AQ, clause 4.9.2.

Mid-point: where the Valuation Period comprises an even number of days the Mid-point for the purpose of operating any of the formulae in these Rules which refer to Mid-point shall be deemed to be the Mid-point of such Period after deducting the last day of that Period.

Monthly Bulletins: for building (and ancillary civil engineering works) and specialist engineering installations the 'BCIS Price Adjustment Formulae Indices Online (PAFI)'.

Non-Adjustable Element: that amount which will be deducted by way of abatement from the amount of adjustment otherwise payable. This amount shall be such percentage as is stated in the Contract Particulars of the amount of adjustment.

Schedule: the Schedule referred to in rule 11.

Valuation Period: the period ending on the date of any Interim Valuation/Application for Interim Payment and beginning on the day following the date of the immediately preceding Interim Valuation/Application for Interim Payment provided, unless otherwise agreed, that the first Valuation Period shall commence on the date when possession of the site is given to the Contractor.

Value of Work: for any Valuation Period shall be the difference (which may be positive or negative) between the Gross Valuation, as defined hereunder, ascertained at the end of the Valuation Period and that ascertained at the end of the previous Valuation Period after having excluded from both those Gross Valuations the amounts for Formula adjustment and the amounts excluded from Formula adjustment under rule 4. The '**Gross Valuation**' is:

- for SBC/Q, SBC/XQ and SBC/AQ, the Gross Valuation for the purpose of issuing an Interim Certificate as defined in clause 4.14 of the Conditions;
- for DB, the Gross Valuation for the purposes of making an Application for Interim Payment as defined in clause 4.12 or 4.13 of the Conditions.

Work Category: one of the Work Categories (Series 3 or Series 2 revised as identified in the Schedule) listed in Appendix A-1 and Appendix B-1 to these Rules. Where the applicable Series is not identified in the Schedule or otherwise clear from the context, Series 3 will apply. The brief descriptive headings of each Work Category are intended to include all work of a generally similar nature within the Category. *Note: Series 2 revised may be discontinued and withdrawn by the BCIS.*

Work Group: A Work Category or combination of Work Categories as identified in the Schedule. This expression is used only where Part II of these Rules applies.

Exclusion from adjustment

- 4 Formula adjustment shall not apply to:
- (i) amounts for work valued as daywork under the Conditions (*SBC/Q, SBC/XQ and SBC/AQ, clause 5.7; DB, clause 5.5*);
 - (ii) amounts for articles manufactured outside the United Kingdom which the Contractor is required by the Employer in the Contract Documents to purchase and import or have imported for direct incorporation into the Works and which require no processing prior to such incorporation and which are specifically identified in the Contract Documents; *Note: Fluctuations in the price of such articles are dealt with under SBC/Q and SBC/AQ, paragraph C.2 of Fluctuations Option C; and SBC/XQ and DB, paragraph C.3 of Fluctuations Option C;*
 - (iii) amounts for work which is valued under the Conditions (*SBC/Q, SBC/XQ and SBC/AQ, clauses 5.6 and 5.8 to 5.10; DB, clauses 5.4, 5.6 and 5.7*) at a fair valuation on rates and prices current when the work is carried out or on some basis which is not referable to the level of rates, prices or amounts in the documents referred to in rules 24a, b and c unless made subject to Formula adjustment by the operation of rule 25;
 - (iv) amounts for unfixed materials and goods for which the Contractor is entitled to payment under the Conditions (*SBC/Q, SBC/XQ and SBC/AQ, clause 4.14.1.2 or 4.14.1.3; DB, clause 4.12.1.3, 4.13.1.2 or 4.13.1.3*) except where rule 58, 63 or 69 apply;
 - (v) amounts for direct loss and/or expense ascertained under the Conditions (*SBC/Q, SBC/XQ and SBC/AQ, clauses 4.20 and 4.21; DB, clauses 4.19 and 4.20*);
 - (vi) any other amounts payable by the Employer which are based on the actual costs incurred by the Contractor;
 - (vii) amounts excluded from Formula adjustment by the operation of rules 14 and 15;
 - (viii) amounts for design work where separately identified in any CDP Analysis in *SBC/Q, SBC/XQ and SBC/AQ* or in the Contract Sum Analysis for DB.

Correction of errors

- 5 a The adjustments effected in the Certificates/Applications for Interim Payment shall be corrected where this is necessary because of:
- (i) arithmetical errors in the calculation of the adjustment made;
 - (ii) incorrect allocation of value to Work Categories (where Part I of these Rules applies) or to Work Groups (where Part II of these Rules applies);
 - (iii) incorrect allocation of work as Contractor's Specialist Work;
 - (iv) use of an incorrect Index Number or Index Numbers.
- b Where the Contractor (for DB, the Employer) so requests for the purpose of ascertaining whether the matters referred to in rule 5a have occurred in relation to any Certificate/Application for Interim Payment, the Quantity Surveyor (for DB, the Contractor) shall make available to the Contractor (for DB, the Employer) such working documents relating thereto as may enable him so to ascertain; provided that any such request is made within a reasonable time after the date of issue of the relevant Certificate/Application for Interim Payment.
- c Where a correction is made in accordance with rule 5a whether or not as a result of the operation of rule 5b, such correction shall be made using the same Index Numbers (but corrected where necessary by the operation of rule 5a(iv)) used for calculating the adjustment previously, though incorrectly, made except that firm Index Numbers shall be used if available.

- 6 (Number not used)

Structural steelwork

- 7 Where structural steelwork is to be undertaken by the Contractor (and Series 2 revised applies), it shall be stated, for *SBC/Q* or *SBC/AQ* in the Contract Bills; for *SBC/XQ* in the Specification/Work Schedules; and for DB in the Contract Sum Analysis which of the following shall apply for the adjustment of the price of structural steelwork:
- (i) Part I, rules 9 to 28 using Work Category 2/27;
 - (ii) Part II, rules 29 to 39 using Work Category 2/27;
 - (iii) Part III, rules 63 to 67.

'Fix-only' Work – Direct Supplies from Employer

- 8** Formula adjustment in respect of the fixing of materials and goods supplied directly by the Employer shall be in accordance with whichever of the methods below has been stated, for SBC/Q and SBC/AQ, in the Contract Bills; for SBC/XQ, in the Specification/Work Schedules; and for DB, in the Contract Sum Analysis (or in the Schedule attached to any of those documents) or, where no such statement has been made, in accordance with whichever of the methods below has been agreed in writing between the Contractor and the Quantity Surveyor (for DB, between the Contractor and the Employer):
- (i) by inclusion in an appropriate Work Category which has been specifically stated in the aforesaid documents or specifically agreed in writing as aforesaid; or
 - (ii) by inclusion in the Balance of Adjustable Work; or
 - (iii) by application of a 'fix-only' index created in accordance with the method set out in Appendix A-2 or B-2 of these Rules.

Section 2

Part I: Work Category method; separate application of the Work Category Index Numbers

The formula

- 9 The formula for adjustment of the Value of Work allocated to Work Categories under Part I of these Rules for Valuation Periods up to and including the Valuation Period in which occurs the date of practical completion is as follows:

$$C = \frac{V(I_v - I_o)}{I_o}$$

where

- C = the amount of the adjustment for the Work Category to be paid to, or recovered from, the Contractor.
V = the Value of Work in the Work Category for the Valuation Period.
I_v = the Index Number for the Work Category for the month during which the Mid-point of the Valuation Period occurred.
I_o = the Index Number for the Work Category for the Base Month.

Note: Any sum included in the valuation in respect of the Balance of Adjustable Work will also be subject to adjustment (see rule 26).

Application of the formula

- 10 For SBC/Q and SBC/AQ, the Contract Bills; for SBC/XQ, the Specification/Work Schedules; and for DB, the Employer's Requirements or the Contractor's Proposals shall state that Formula adjustment will be under Part I of these Rules by application of each relevant Work Category Index Number and shall state the Base Month. *Note: This should be recorded in the Contract Particulars.*

Allocation to Work Categories, etc.

- 11 a For SBC/Q and SBC/AQ, the Contract Bills shall include a Schedule which has been issued to the Contractor when tendering and which will indicate to which of the following each item in the Bills is allocated: one of the Work Categories; 'fix-only' work under rule 8(iii); Contractor's Specialist Work; Provisional Sum work subject to Formula adjustment (rule 16); Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4. Alternatively, the allocation shall be effected by annotation of each item in the Bills of Quantities issued to the Contractor when tendering and such annotation shall constitute the Schedule.
- b For SBC/XQ, the Contract Documents shall include a Schedule which will indicate to which of the following each and every part of the Works shown upon the Contract Drawings or described by or referred to in the Specification/Work Schedules is allocated: one of the Work Categories; 'fix-only' work under rule 8(iii); Contractor's Specialist Work; Provisional Sum work subject to Formula adjustment (rule 16); Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4.
- c For DB, the Contract Sum Analysis provided by the Contractor shall include a Schedule which will indicate to which of the following each item in the Contract Sum Analysis is allocated: one of the Work Categories; 'fix-only' work under rule 8(iii); Contractor's Specialist Work; Provisional Sum work subject to Formula adjustment (rule 16); Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4.
- d The Employer and Contractor shall be deemed for the purposes of Fluctuations Option C and these Rules but not further or otherwise to have agreed the allocation of the items in the Schedule.

External works

- 12 Work Categories 2/45, 2/46, 2/47 and 2/48 relate only to drainage pipework (other than cast iron), fencing, gates and screens, bituminous surfacing to roads and paths, and soft landscaping and Work Categories 3/51, 3/52, 3/53, and 3/54 relate only to coated macadam and asphalt paving, slab and block paving, site planting and fencing. All other items for external works and services must be allocated among the other Work Categories and that part of the Schedule related to external work must identify the Work Category in which each such item falls.

Multiple Work Category items

- 13 a An item in the Contract Documents referred to in rule 11a, b or c which relates to works in more than one Work Category shall be allocated to the most significant Work Category represented within the item.
- b Where in the Contract Documents referred to in rule 11a, b or c there are grouped together items of work relating to several different Work Categories and such items are of relatively low value, all of the items so grouped may be allocated to the most significant Work Category represented in the group.

Old materials

- 14 Where any credit is allowed by the Contractor for old materials arising from the works such credit shall not be subject to Formula adjustment.

P.C. rates/P.C. Sum

- 15 The value of work described in the Contract Documents by reference to P.C. rates/P.C Sum shall not be subject to Formula adjustment.

Provisional Sums

- 16 The value of work executed by the Contractor in accordance with instructions as to the expenditure of Provisional Sums shall be allocated to Work Categories; 'fix-only' work under rule 8(iii); Contractor's Specialist Work; Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4.

- 17 (Number not used)

Price level

- 18 The level of the prices in the Contract Bills/Priced Document/Contract Sum Analysis shall be deemed to be that represented by the firm Index Numbers published in the Monthly Bulletins for the Base Month.

- 19 (Number not used)

Formula adjustment – Valuation Periods up to practical completion

- 20 The Value of Work in each Valuation Period up to and including the Valuation Period in which occurs the date of practical completion shall be allocated in accordance with the Schedule.

- 21 a The amount of adjustment in respect of Value of Work allocated to Work Categories shall be calculated by the application of the formula in rule 9.

- b The amount of adjustment in respect of Value of Work allocated to Balance of Adjustable Work shall be calculated in accordance with rules 26a and b.

- 22 Formula adjustment in respect of the Contractor's Specialist Work shall be in accordance with Part III of these Rules.

- 23 a The Index Numbers used for calculating Formula adjustment shall be the last published provisional Index Numbers for each Work Category together with the firm Index Numbers current for the Base Month; where firm Index Numbers for the Base Month are not available Formula adjustment shall be by reference to the provisional Index Numbers for the Base Month.

- b Firm Index Numbers for the appropriate month shall be substituted for any provisional Index Numbers as soon as available and any alteration to the adjustment under the provisional Index Numbers shall wherever practicable be made in the next certificate/application for payment following publication of the firm Index Number.
- c In the event of an Index Number published as firm being revised any alteration to earlier adjustments which results from the application of the revised firm Index Number shall wherever practicable be made in the next certificate/application for payment following publication of such revision.

Variations, Changes and Provisional Sum work

- 24
 - a Work valued under SBC/Q and SBC/AQ clauses 5.6 and 5.8 to 5.10 shall be subject to Formula adjustment wherever the valuation is determined by or based upon rates and prices in the Contract Bills or based upon rates and prices current at the Base Month.
 - b Work valued under SBC/XQ clauses 5.6 and 5.8 to 5.10 shall be subject to Formula adjustment wherever the valuation is consistent with the relevant rates, prices or amounts in the Priced Document or based upon rates and prices current at the Base Month.
 - c Work valued under DB clauses 5.4, 5.6 and 5.7 shall be subject to Formula adjustment wherever the valuation is consistent with the values in the Contract Sum Analysis or at values current at the Base Month.
- 25 Any work valued under SBC/Q, SBC/AQ or SBC/XQ clauses 5.6 and 5.8 to 5.10 or DB clauses 5.4, 5.6 and 5.7 which is
 - (i) to be executed over an extended period, and
 - (ii) the valuation of which is on a basis other than those referred to in rule 24a, b or c,
 may notwithstanding (ii) above be subject to Formula adjustment as follows:
 a new Base Month, specifically for that work, which is appropriate to the level of the rates and prices or values used in the valuation shall be agreed in writing and the formula shall then be separately applied for the Valuation Periods during which the work is executed using the new Base Month.

Adjustment for Balance of Adjustable Work

- 26
 - a Subject to rule 26b the adjustment of any portion of the Balance of Adjustable Work included in the Value of Work for a Valuation Period shall be calculated by applying the following formula:

$$C = V_b \times \frac{C_c}{V_c}$$

where

C = the amount of adjustment for the Balance of Adjustable Work to be paid to, or recovered from, the Contractor.

V_b = the Value of Work in the Balance of Adjustable Work for the Valuation Period.

C_c = the total amount of the adjustment for all Work Categories for the Valuation Period to be paid to, or recovered from, the Contractor in accordance with rule 9.

V_c = the total Value of Work in all Work Categories for the Valuation Period.

- b Where the Value of Work in any Valuation Period contains no work allocated to Work Categories any Balance of Adjustable Work included in the Value of Work shall unless otherwise agreed be allocated to Work Category 2/1 (where Series 2 revised applies) or Work Category 3/01 (where Series 3 applies) and adjusted in accordance with rule 9.

Unfixed Materials and Goods

- 27
 - a The value of unfixed materials and goods included in Certificates/Applications for Interim Payment in accordance with the Conditions shall not be subject to Formula adjustment. *Note: When they are incorporated in the Works the value of the work so executed, including the value of the materials or goods, will be subject to rules 21 to 23.*
 - b If it is stated in the Contract Documents that the Employer requires early delivery of any materials and goods specified therein then adjustment in respect of work incorporating these specified materials and goods may be subject to special arrangements provided always that full details of these special arrangements are recorded in the Contract Documents.

Formula adjustment – Valuation Periods after practical completion, Final Certificate/Final Statement

- 28 For the Formula adjustment of:
- (i) any Value of Work, other than Contractor's Specialist Work, for a Valuation Period subsequent to the Valuation Period in which occurs the date of practical completion; and
 - (ii) amounts included in the adjustment of the Contract Sum (SBC/Q or SBC/XQ, clause 4.3; DB, clause 4.2) or in the ascertainment of the Final Sum (SBC/AQ, clause 4.3) which are subject to Formula adjustment under Part I and which have not been so adjusted in Certificates/Applications for Interim Payment,
- notwithstanding rule 21, the formula is as follows:

$$C = \frac{V \times C_t}{V_t}$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.
- V = the Value of Work described at rule 28(i) or the amounts described at rule 28(ii).
- C_t = the net total of the Formula adjustment included in previous Certificates/Applications for Interim Payment by the use of the formulae set out in rule 9 and rule 26a.
- V_t = the total Value of Work not being Contractor's Specialist Work included in previous Certificates/Applications for Interim Payment.

Part II: Work Group method using Weighted Work Group Indices

Note: Part II does not apply to SBC/AQ; see rule 2b.

The formula

- 29 The Work Categories are to be combined into a number of Work Groups for which Weighted Index Numbers are to be calculated. The formula for adjustment of the Value of Work allocated to Work Categories and combined into Work Groups under Part II of these Rules for Valuation Periods up to and including the Valuation Period in which occurs the date of practical completion is as follows:

$$C = \frac{V(I_v - I_o)}{I_o}$$

where

- C = the amount of the adjustments for the Work Group to be paid to, or recovered from, the Contractor.
V = the Value of Work in the Work Group for the Valuation Period.
 I_v = the Weighted Index Number for the Work Group for the month during which the Mid-point of the Valuation Period occurred.
 I_o = the Weighted Index Number for the Work Group for the Base Month.

Notes:

1. Any sum included in the valuation in respect of the Balance of Adjustable Work will also be subject to adjustment. See rule 38.
2. For calculation of the Work Group Weighted Index Numbers see rule 34.

Work Groups

- 30 For SBC/Q, the Contract Bills; for SBC/XQ, the Specification/Work Schedules; and for DB, the Employer's Requirements or Contractor's Proposals shall:
- (i) state that Formula adjustment will be under Part II of these Rules by the application of the Work Group method;
 - (ii) state the method of grouping to be adopted (that is which Work Categories are to be included in each Work Group); and
 - (iii) state the Base Month.

Note: These statements should be recorded in the Contract Particulars.

Weighting

- 31 For the purposes of calculating the Work Group Weighted Index Numbers in accordance with rules 34 and 35 but not further or otherwise, the weighting allotted to each Work Category within the Work Groups shall remain constant throughout the operation of the formula in rule 29 and is not to be altered to take account of any change in the composition of the Works arising from instructions under SBC/Q or SBC/XQ clauses 3.14 and 3.16 or DB clauses 3.9 and 3.11.

Schedule

- 32 Rules 11a, 11b and 11c in Part I shall apply to the Work Group Method except for the alternative of effecting allocation by annotation. The Schedule shall indicate the composition of the Work Groups.

Application of rules in Part I

- 33 The following rules of Part I shall apply to adjustment under Part II of these Rules:

- Rule 11d Agreement of allocation in the Schedule
Rule 12 External works (unless a special Work Group for all external works is created from the Work Categories)
Rule 13 Multiple Work Category items
Rule 14 Old materials
Rule 15 P.C. rates/P.C. Sum

- Rule 16 Provisional Sums
- Rule 18 Price level
- Rule 20 Formula adjustment – Valuation Periods up to practical completion
- Rule 22 Contractor’s Specialist Work: adjustment
- Rule 28 Formula adjustment: Valuations after practical completion and in Final Certificate/Final Statement with ‘Part II’ substituted for ‘Part I’, ‘notwithstanding rule 35a’ substituted for ‘notwithstanding rule 21’, the reference to ‘the ascertainment of the Final Sum under SBC/AQ clause 4.3’ omitted and, where rule 30 applies, substitute rule 29 and rule 38a for rule 9 and rule 26a respectively.

Work Group Weighted Index Numbers for Base Month

- 34 a The Quantity Surveyor (for DB, the Contractor) shall complete the Schedule by setting out the total amount included in the Contract Sum for each Work Category within each Work Group and that total amount shall be used to calculate in accordance with rule 34c the Weighted Index Number for each Work Group and to calculate the Balance of Adjustable Work.
- b A Work Group Weighted Index Number is the single Index Number calculated to one decimal place for each Work Group which reflects proportionately the following factors for each of the constituent Work Categories within the Work Group:
 - (i) the level of the Work Category Index Number; and
 - (ii) the amount included in the Contract Sum for work allocated to the Work Category.
Note: As stated in rule 31, the amount referred to in b(ii) above is not changed to take account of the actual work executed.
- c The Weighted Index Number for each Work Group shall be calculated by:
 - (i) multiplying the amount (shown on the Schedule in accordance with rule 34a) for each Work Category in the Work Group by the Base Month Index Number for the Work Category;
 - (ii) adding together the products resulting from the application of (i) above; and
 - (iii) dividing the result of the application of (ii) above by the sum of the amounts of the Work Categories in the Work Group.
- d Work Group Weighted Index Numbers for the Base Month are to be calculated as soon as the firm Work Category Index Numbers for the Base Month are published.

Formula adjustment – Valuation Periods up to practical completion

- 35 a Subject to the reference to rule 28 in rule 33, the Value of Work for each Valuation Period up to and including the Valuation Period in which occurs the date of practical completion shall be allocated in accordance with the Schedule. Weighted Index Numbers for the relevant Work Groups shall be calculated in a similar way to the calculation of Work Group Weighted Index Numbers for the Base Month using the same Work Category amounts, but using the published Work Category Index Numbers current at the Mid-point of the Valuation Period.
- b The amount of adjustment shall be calculated by applying the formula in rule 29 to the Value of Work in each Work Group.
- 36 a The Index Numbers used for calculating adjustment shall be the firm Work Group Weighted Index Numbers for the Base Month and the last published provisional Index Numbers: where firm Index Numbers for the Base Month are not available adjustment shall be by reference to Work Group Weighted Index Numbers calculated from provisional Index Numbers for the Base Month.
- b Firm Work Group Weighted Index Numbers shall be substituted for any provisional Work Group Weighted Index Numbers as soon as available and any alteration to the adjustment under the provisional Work Group Weighted Index Numbers shall wherever practicable be made in the next certificate/application for payment following publication of the firm Work Category Index Numbers from which the firm Work Group Weighted Index Numbers are calculated.
- c In the event of an Index Number published as firm being revised any alteration to earlier adjustments which result from the application of the revised firm Index Number shall wherever practicable be made in the next certificate/application for payment following publication of such revision.

Valuation of Variations, Changes and other Work

- 37 a Rules 24a, b and c shall apply to the Work Group method except for the reference to SBC/AQ.
- b The method of adjustment in rule 25 shall not apply to the Work Group method.

Adjustment of Balance of Adjustable Work

- 38 a Subject to rule 38b, the adjustment of any portion of the Balance of Adjustable Work included in the Value of Work for a Valuation Period shall be calculated by applying the following formula:

$$C = V_b \times \frac{C_g}{V_g}$$

where

C = the amount of the adjustment for the Balance of Adjustable Work to be paid to, or recovered from, the Contractor.

V_b = the Value of Work in the Balance of Adjustable Work for the Valuation Period.

C_g = the total amount of the adjustment for all Work Groups for the Valuation Period to be paid to, or recovered from, the Contractor in accordance with rule 29.

V_g = the total Value of Work in all Work Groups for the Valuation Period.

- b Where the Value of Work in any Valuation Period contains no work allocated to Work Groups the Balance of Adjustable Work included in the Value of Work shall unless otherwise agreed be allocated to Work Category 2/1 (where Series 2 revised applies) or Work Category 3/01 (where Series 3 applies) and adjusted in accordance with rule 9 of Part I.

Unfixed Materials and Goods

- 39 Rule 27: 'Unfixed Materials and Goods' shall apply to the Work Group method but substituting a reference in rule 27a to rules 35 and 36.

Part III: Application of the Formula Method to certain Specialist Engineering Installations carried out by the Contractor as Contractor's Specialist Work

General

- 40 The definitions in rule 3 shall apply to Part III of these Rules so far as the definitions are not specifically varied in this Part.
- 41 The value of unfixed materials and goods shall not be taken into account for adjustment except where rule 58 (Lift installations) or rule 63 (Structural steelwork installations) or rule 69 (Catering equipment installations) apply.
- 42 Part III of these Rules shall apply to the following specialist engineering work carried out by the Contractor and identified in the Schedule as Contractor's Specialist Work:
- (i) Electrical installations;
 - (ii) Heating, ventilating and air conditioning installations and sprinkler (Mechanical) installations;
 - (iii) Lift installations;
 - (iv) Structural steelwork installations (but subject to rule 7);
 - (v) Catering equipment installations
for which specialist formulae Index Numbers are published in the Monthly Bulletin.
- 43 The weightings of labour and materials for Contractor's Specialist Work to which rule 50 (Electrical installations) and rule 54 (Heating, ventilating and air conditioning installations and sprinkler (Mechanical) installations) apply shall be stated in the Contract Bills for SBC/Q or SBC/AQ, in the Specification/Work Schedules for SBC/XQ and in the Contract Sum Analysis for DB. The Employer and the Contractor shall be deemed for the purposes of Fluctuations Option C and Part III of these Rules but not further or otherwise to have agreed the weightings so stated. *Note: See also rules 64 and 72b.*
- 44
- a The Index Numbers used for calculating adjustment shall be the firm Index Numbers for the factors defined in the formulae in rules 50, 54, 58, 63 and 69.
 - b Until firm Index Numbers are published the last published provisional Index Numbers shall be used. Firm Index Numbers for the appropriate month shall be substituted for any provisional Index Numbers as soon as available and any alteration to the adjustment under the provisional Index Number shall wherever practicable be made in the next certificate/application for payment following publication of the firm Index Numbers. In the formulae for Lift installations and Structural steelwork installations the latest published provisional Index Numbers for labour shall be used (even though for an earlier month than that required).
Note: The labour Index Numbers for these formulae are calculated on the basis of four-month moving averages. These Index Numbers are necessarily published in the Monthly Bulletins up to three months late. Accordingly the latest published Numbers should always be used pending publication of the provisional/firm Index Numbers for the relevant month.
 - c In the event of an Index Number published as firm being revised any alteration to earlier adjustments which result from the application of the revised firm Index Numbers shall wherever practicable be made in the next certificate/application for payment following publication of such revision.
- 45 (Number not used)
- 46 (Number not used)
- 47 Subject to rule 48 the application of the specialist formulae in Part III of these Rules shall be in accordance with the rules in Part I or Part II (whichever Part is applicable to the Works) so far as relevant and applicable and so far as these Rules are not specifically varied in this Part.
- 48 Adjustment under the formulae for Lift installations in rule 58 shall be effected in accordance with rule 61 and included in the next Certificate/Application for Interim Payment after the events referred to in rule 61 have occurred.

Formula adjustment – Valuation Periods up to practical completion

- 49 a For Valuation Periods up to and including the Valuation Period in which occurs the date of practical completion, amounts subject to Formula adjustment shall be adjusted using the relevant formula of those in rules 50, 54, 58, 63 and 69.

Formula adjustment – Valuation Periods after practical completion, Final Certificate/Final Statement

- b For each installation, for the Formula adjustment of:
- (i) any Value of Work for a Valuation Period subsequent to the Valuation Period in which occurs the date of practical completion; and
 - (ii) amounts included in the adjustment of the Contract Sum (SBC/Q and SBC/XQ clause 4.3; DB clause 4.2 or in the ascertainment of the Final Sum (SBC/AQ clause 4.3) which are subject to Formula adjustment and which have not been so adjusted in Certificates/Applications for Interim Payment;
- notwithstanding rules 50, 54, 58, 63 and 69, the formula is as follows:

$$C = \frac{V \times C_t}{V_t}$$

where

C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.

V = the Value of Work described at (i) above or the amounts described at (ii) above.

C_t = the net total of the Formula adjustment included in previous Certificates/Applications for Interim Payment by the use of formulae set out in rule 50, 54, 58, 63 or 69 whichever is relevant.

V_t = the total Value of Work for the relevant installation included in previous Certificates/Applications for Interim Payment.

Electrical installations

The formula

- 50 The formula is as follows:

$$C = V \left[\frac{A(L_{ev} - L_{eo})}{L_{eo}} + \frac{B(M_{ev} - M_{eo})}{M_{eo}} \right]$$

where

C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.

V = the value of electrical installations included in the Value of Work for the Valuation Period.

A = the weighting allotted to labour.

B = the weighting allotted to materials. *Note: A + B = 1.00.*

L_{ev} = the Index Number for labour for the month during which the Mid-point of the Valuation Period occurred.

L_{eo} = the Index Number for labour for the Base Month.

M_{ev} = the Index Number for materials one month before the month in which the Mid-point of the Valuation Period occurred.

M_{eo} = the Index Number for materials one month before the Base Month.

- 51 (Number not used)

Application of the weightings

- 52 The weightings stated in the relevant document in accordance with rule 43 shall apply to all electrical installation work which is Contractor's Specialist Work including any arising from instructions under SBC/Q, SBC/XQ or SBC/AQ clauses 3.14 and 3.16; or DB clauses 3.9 and 3.11.

- 53 (Number not used)

Heating, ventilating and air conditioning installations and sprinkler installations

The formula

54 The formula is as follows:

$$C = V \left[\frac{A(L_{mv} - L_{mo})}{L_{mo}} + \frac{B(M_{mv} - M_{mo})}{M_{mo}} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.
V = the value of heating, ventilating and air conditioning installations and/or sprinkler installations included in the Value of Work for the Valuation Period.
A = the weighting allotted to labour.
B = the weighting allotted to materials. *Note: A + B = 1.00.*
L_{mv} = the Index Number for labour for the month during which the Mid-point of the Valuation Period occurred.
L_{mo} = the Index Number for labour for the Base Month.
M_{mv} = the Index Number for materials one month before the month in which the Mid-point of the Valuation Period occurred.
M_{mo} = the Index Number for materials one month before the Base Month.

- 55 a The separate materials index for sprinkler installations shall be used if so stated in the Contract Bills for SBC/Q or SBC/AQ, in the Specification/Work Schedules for SBC/XQ and in the Contract Sum Analysis for DB.
- b Where the Contractor's Specialist Work includes both heating and air conditioning installation and a sprinkler installation and for the latter a different labour/materials weighting is to be used and/or the separate sprinkler installation materials index is to be used, the two installations shall be treated separately for the application of the Formula in rule 54, each with its own value 'V'.

Application of the weightings

- 56 The weightings stated in the relevant document in accordance with rule 43 shall apply to all work in the installation to which they relate which is Contractor's Specialist Work including any arising from instructions under SBC/Q, SBC/XQ or SBC/AQ clauses 3.14 and 3.16 or DB clauses 3.9 and 3.11.
- 57 (Number not used)

Lift installations

The formulae

58 The formulae are as follows:

a for shop fabrication

$$C = V \left[\frac{0.47 \left(\frac{L_{mx} + L_{mc}}{2} - L_{mo} \right)}{L_{mo}} + \frac{0.18(M_{mx} - M_{mo})}{M_{mo}} + \frac{0.12(M_{ex} - M_{eo})}{M_{eo}} \right]$$

b for site installations

$$C = V \left[\frac{0.23 \left(\frac{L_{es} + L_{ec}}{2} - L_{eo} \right)}{L_{eo}} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.
- V = the value of Lift installations in the Contract Documents excluding any amounts to which rule 4 applies.
- L_{mo} = the Index Number for mechanical labour for the Base Month.
- L_{eo} = the Index Number for electrical labour for the Base Month.
- L_{mx} = the Index Number for mechanical labour three months prior to the month in which completion of manufacture occurred.
- L_{mc} = the Index Number for mechanical labour for the month in which completion of manufacture occurred.
- L_{es} = the Index Number for electrical labour for the month in which commencement of site installation occurred.
- L_{ec} = the Index Number for electrical labour for the month in which completion of site installation occurred.
- M_{mo} = the Index Number for mechanical materials for the month before the Base Month.
- M_{eo} = the Index Number for electrical materials for the month before the Base Month.
- M_{mx} = the Index Number for mechanical materials four months prior to the month in which completion of manufacture occurred.
- M_{ex} = the Index Number for electrical materials four months prior to the month in which completion of manufacture occurred.

59 The weightings allocated to the Index Numbers in the formula in rule 58 are fixed as follows:

<i>Item</i>	<i>Weighting</i>
Mechanical labour involved in shop fabrication	0.47
Electrical labour involved in site installation	0.23
Mechanical materials	0.18
Electrical materials	0.12
	<u>1.00</u>

The above weightings apply to all Lift installation work which is Contractor's Specialist Work including any arising from instructions under SBC/Q, SBC/XQ or SBC/AQ clauses 3.14 and 3.16 or DB clauses 3.9 and 3.11.

60 (Number not used)

Application of the formulae

- 61 a Adjustment under the formula in rule 58a shall be effected in respect of shop fabrication either upon completion of manufacture of all fabricated components or upon their delivery to site as stated in: for SBC/Q and SBC/AQ, the Contract Bills; for SBC/XQ, the Specification/Work Schedules; and for DB, the Contract Sum Analysis.
- b Adjustment under the formula in rule 58b shall be made upon completion of the installation.

Structural steelwork installations

The formula – application

62 The formula in rule 63 applies when structural steelwork is carried out as Contractor's Specialist Work:

- (i) where Series 2 revised applies and where so specifically stated in the Contract Bills for SBC/Q or SBC/AQ; in the Specification/Work Schedules for SBC/XQ; and in the Contract Sum Analysis for DB. *Note: See rule 7;*
- (ii) where Series 3 applies.

63 The formula is as follows:

$$C = \left[V_m \times \frac{M_d - M_o}{M_o} \right] + \left[V_f \times \frac{L_f - L_o}{L_o} \right] + \left[V_e \times \frac{L_e - L_o}{L_o} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.
- V_m = the weight in tonnes of steel delivered to site during the Valuation Period (the value of which is to be included in Certificates/Applications for Interim Payment) multiplied by the average price of steel recorded in the Contract Documents.

- V_f = the value of fabrication and delivery obtained by deducting the amount V_m and the amount V_e from the value of structural steelwork installations included in the Value of Work for the Valuation Period. *Note: The exclusion of the value of unfixed materials from the Formula adjustment in rule 4(iv) does not apply to adjustment under rule 63. Therefore, in the calculation of Value of Work in accordance with rule 3, each of the total valuations referred to will include the value of unfixed materials and goods for which the Contractor is entitled to payment. By virtue of rule 66a, however, they will not include any value of off-site materials or goods which may be included in Certificate/Application for Interim Payment.*
- V_e = the weight in tonnes of steel erected during the Valuation Period multiplied by the average price of erection recorded in the Contract Documents.
- M_d = the Index Number for structural steel for the month in which the date seven weeks before delivery to site occurred.
- M_o = the Index Number for structural steel for the month before the Base Month.
- L_f = the Index Number for labour for the month in which the date three weeks before delivery to site occurred.
- L_e = the Index Number for labour for the month in which the Mid-point of the Valuation Period occurred.
- L_o = the Index Number for labour for the Base Month.

- 64** The following prices, as stated by the Contractor, shall be recorded in the Contract Documents:
- (i) the average price per tonne included in the Contract Sum of steel delivered to fabricator's works (used to calculate factor V_m in the formula);
 - (ii) the average price per tonne included in the Contract Sum for erection of steelwork (used to calculate factor V_e in the formula).

- 65** (Number not used)

Application of the formula

- 66** a Formula adjustment shall not be applied to the value of off-site materials and goods included in a valuation.
- b The Contractor shall notify the Quantity Surveyor, (for DB, the Employer) of the weight and date of each delivery of fabricated steel to the site in order that the amount of V_m and the Index Numbers M_d and L_f can be determined.
- 67** Any discrepancy between the total recorded deliveries to site and the final measured weight shall be corrected in the last Interim Valuation or in the calculations for the Final Certificate/Final Statement. The Index Number to be used for the purposes of rule 67 shall be that appropriate to the last recorded delivery to the site.

Catering equipment installations

Definitions

- 68** In rules 68 to 75 the term 'factor items' shall mean items which are standard catalogue items not requiring specific design and manufacture for a particular contract. The term 'materials' shall exclude factor items.

The formulae

- 69** The formulae are as follows:

- a for shop fabrication

$$C = V_f \left[\frac{0.40 \left(\frac{L_{mx} + L_{mc}}{2} - L_{mo} \right)}{L_{mo}} + \frac{0.40(M_{mx} - M_{mo})}{M_{mo}} + \frac{0.20(M_{sx} - M_{so})}{M_{so}} \right]$$

- b for supply of factor items

$$C = V_m \left[\frac{F_{mx} - F_{mo}}{F_{mo}} \right]$$

c for site installations

$$C = V_i \left[\frac{L_{md} - L_{mo}}{L_{mo}} \right]$$

where

C = the amount of the Formula adjustment to be paid to, or recovered from, the Contractor.

V_f = the amount of the Value of Work for the Valuation Period relating to shop fabrication.

V_m = the amount of the Value of Work for the Valuation Period relating to the supply of factor items. *Note: The exclusion of the value of unfixed materials from Formula adjustment in rule 4(iv) does not apply to adjustment under rule 69.*

V_i = the amount of the Value of Work for the Valuation Period relating to site installation.

L_{mo} = the Index Number for mechanical labour for the Base Month.

L_{mx} = the Index Number for mechanical labour two months prior to the date of delivery to site.

L_{mc} = the Index Number for mechanical labour for the month in which the date of delivery to site occurs.

L_{md} = the Index Number for mechanical labour for the month during which the Mid-point of the Valuation Period for site installation occurs.

F_{mo} = the Index Number for factor items for the month before the Base Month.

F_{mx} = the Index Number for factor items for the month in which the items are delivered to site.

M_{mo} = the Index Number for mechanical materials for the month before the Base Month.

M_{mx} = the Index Number for mechanical materials three months prior to the date of delivery to site.

M_{so} = the Index Number for stainless steel for the month before the Base Month.

M_{sx} = the Index Number for stainless steel three months prior to the date of delivery to site.

70 a The apportionment of the value of each item for catering equipment installations between (i) materials and shop fabrication; (ii) supply of factor items and (iii) site installation as stated by the Contractor shall be recorded in the Contract Documents.

b The Contractor and the Employer shall be deemed for the purposes of Fluctuations Option C and Part III of these Rules but not further or otherwise to have agreed the apportionment referred to in rule 70a and recorded in the Contract Documents.

71 (Number not used)

Application of the formulae

72 a Subject to rule 4 the values of materials and shop fabrication (V_f), factor items (V_m) and site installation (V_i) for a Valuation Period shall be calculated in accordance with the apportionment of the value of the relevant items as recorded in the Contract Documents.

b The weightings allocated to the indices for use in applying the formula in rule 69a (shop fabrication) are fixed as follows and will apply to all shop fabrication for catering equipment installations which is Contractor's Specialist Work including any arising from instructions under SBC/Q, SBC/XQ or SBC/AQ clauses 3.14 and 3.16 or DB clauses 3.9 and 3.11.

<i>Item</i>	<i>Weighting</i>
Mechanical labour for shop fabrication	0.40
Mechanical materials for fabrication generally	0.40
Stainless steel for fabrication generally	<u>0.20</u>
	<u>1.00</u>

73 Formula adjustment shall not be applied to the value of off-site materials or goods or factor items included in a valuation as a consequence of the exercise of the Architect's/Contract Administrator's, (for DB, the Employer's), discretion under the Conditions but shall be applied after the delivery to site of such unfixed materials and goods or factor items.

74 The Contractor shall notify the Quantity Surveyor, (for DB the Employer), of the dates of delivery to the site of materials and factor items.

75 (Number not used)

Appendices to Formula Rules (Main Contract)

Appendix A-1: List of Work Categories (Series 3) (rule 3)

- 3/01 Demolitions
- 3/02 Excavation and Disposal
- 3/03 Filling: Imported, Hardcore and Granular
- 3/04 Piling: Concrete
- 3/05 Piling: Steel
- 3/06 Concrete: In Situ
- 3/07 Concrete: Formwork
- 3/08 Concrete: Reinforcement
- 3/09 Concrete: Precast
- 3/10 Brickwork and Blockwork
- 3/11 Stonework
- 3/12 Softwood Carcassing and Structural Members
- 3/13 Metal: Decking
- 3/14 Metal: Miscellaneous
- 3/15 Cladding and Covering: Glazed
- 3/16 Cladding and Covering: Fibre Cement
- 3/17 Cladding and Covering: Coated Steel
- 3/18 Cladding and Covering: Plastics
- 3/19 Cladding and Covering: Glass Reinforced Plastics
- 3/20 Cladding and Covering: Slate and Tile
- 3/21 Cladding and Covering: Lead
- 3/22 Cladding and Covering: Aluminium
- 3/23 Cladding and Covering: Copper
- 3/24 Cladding and Covering: Zinc
- 3/25 Waterproofing: Asphalt
- 3/26 Waterproofing: Built Up Felt Roofing
- 3/27 Waterproofing: Liquid Applied Coatings
- 3/28 Boards, Fittings and Trims: Softwood
- 3/29 Boards, Fittings and Trims: Hardwood
- 3/30 Boards, Fittings and Trims: Manufactured
- 3/31 Linings and Partitions: Plasterboard
- 3/32 Linings and Partitions: Self Finished
- 3/33 Suspended Ceilings
- 3/34 Raised Access Floors
- 3/35 Windows and Doors: Softwood
- 3/36 Windows and Doors: Hardwood
- 3/37 Windows and Doors: Steel
- 3/38 Windows and Doors: Aluminium
- 3/39 Windows and Doors: Plastics
- 3/40 Ironmongery
- 3/41 Glazing
- 3/42 Finishes: Screeds
- 3/43 Finishes: Bitumen, Resin and Rubber Latex Flooring
- 3/44 Finishes: Plaster
- 3/45 Finishes: Rigid Tiles and Terrazzo Work
- 3/46 Finishes: Flexible Tiles and Sheet Coverings
- 3/47 Finishes: Carpets
- 3/48 Finishes: Painting and Decorating
- 3/49 Sanitary Appliances
- 3/50 Insulation
- 3/51 Pavings: Coated Macadam and Asphalt
- 3/52 Pavings: Slab and Block
- 3/53 Site Planting
- 3/54 Fencing
- 3/55 Pipes and Accessories: Spun and Cast Iron
- 3/56 Pipes and Accessories: Steel

- 3/57 Pipes and Accessories: Plastics
- 3/58 Pipes and Accessories: Copper
- 3/59 Pipes and Accessories: Aluminium
- 3/60 Pipes and Accessories: Clay and Concrete

Appendix A-2: 'Fix-only' indices (Series 3) (rule 8(iii))

A (1) Where there is a significant value of work in respect of items of 'fix-only' falling within one Work Category, it may be appropriate to create a special 'fix-only' index. Such items must be identified in the Schedule and shall be subject to adjustment in accordance with the Formula Rules so far as relevant and applicable as if 'fix-only' in each Work Category or Work Group were a separate Work Category or Work Group.

(2) The calculation of a 'fix-only' Index Number is demonstrated by the following example for the fixing only of precast concrete structural units which are supplied against a P.C. rate/P.C. Sum.

(a) 'Price adjustment formulae for construction contracts 1990 Series of Indices: Users Guide' (Building Series 3) published by HMSO sets out the resources for Work Category 3/09 'Concrete: Precast' weighted in terms of percentage value as follows:

Labour: building	24%
Plant	9%
Structural precast concrete	38%
Non-structural units	24%
Integral facings	2%
Cement	2%
Sealants	1%
	100%

(b) The published Index Numbers for a specified month are say, 158 labour and 170 plant.

(c) A 'fix-only' Index Number for that month of the labour and plant required for fixing only precast concrete structural units may be calculated as follows:

Labour	24 x 158 =	3792
Plant	9 x 170 =	1530
Total percentage	33	5322

'Fix-only' Index Number for fixing only precast concrete units $\frac{5322}{33} = 161.27$

(d) It will be necessary to calculate the 'fix-only' Index Number for the Base Month and for each month in which the Index Number is subsequently to be used.

(3) The 'fix-only' Index Numbers so calculated are to be applied to the value of the 'fix-only' items and no separate adjustment made for the ancillary materials (cement, aggregate, etc.).

- B** The percentages of skilled labour, unskilled labour and plant for each Work Category and which will be needed for calculating a 'fix-only' Index Number are set out below.
(Source: 'Price adjustment formulae for construction contracts 1990 Series of Indices: Users Guide' (Building Series 3))

Work Category	Resource	Weighting %
3/01	Labour: building	51
	Plant	43
	Steel shoring	4
	Timber	2
3/02	Labour: building	39
	Plant	55
	Timber support	4
	Steel support	2
3/03	Labour: building	26
	Plant	16
	Hardcore	41
	Sand and gravel	16
	Granite chippings	1
3/04	Labour: building	25
	Plant	28
	Concrete	35
	Reinforcement	12
3/05	Labour: building	16
	Plant	28
	Steel piling	56
3/06	Labour: building	31
	Plant	3
	Concrete	64
	Timber	1
	Plywood	1
3/07	Labour: building	60
	Plant	1
	Backing timber	21
	Facing timber	13
	Steel supports	3
	Fixings	1
	Waffle pans	1
3/08	Labour: building	25
	Plant	1
	Bar reinforcement	56
	Fabric reinforcement	16
	Tying wire	1
Plastic supports	1	
3/09	Labour: building	24
	Plant	9
	Structural precast concrete	38
	Non-structural units	24
	Integral facings	2
	Cement	2
Sealants	1	

Work Category	Resource	Weighting %
3/10	Labour: building	49
	Plant	1
	Blocks	22
	Facing bricks	13
	Common bricks	6
	Engineering bricks	3
	Fletton bricks	2
	Cement	2
	Sand	1
	Lime	1
3/11	Labour: building	26
	Plant	1
	Natural stone	30
	Cast stone	40
	Fixings	2
	Sealants	1
3/12	Labour: building	45
	Plant	2
	Softwood	47
	Fixings	4
	Plywood	1
	Adhesives	1
3/13	Labour: building	19
	Plant	6
	Metal decking	69
	Fixings	6
3/14	Labour: building	26
	Plant	1
	Steel angles and tees	27
	Bolts	15
	Steel tubes	11
	Cast iron products	6
	Stainless steel angles	6
	Steel sheets and plates	6
	Aluminium sections	2
3/15	Labour: building	19
	Plant	1
	Glass	49
	Framing members	18
	Finishes to framing	9
	Flashings	2
	Sealants	1
	Fixings	1
3/16	Labour: building	17
	Plant	6
	Fibre cement profiled sheets	48
	Coated steel sheets	11
	Insulation	8
	Aluminium sections	4
	Sealants	4
Fixings	2	
3/17	Labour: building	22
	Plant	1
	Coated steel sheets	41
	Plastic coating	21
	Insulation	5
	Steel sections	4
	Sealants	2

Work Category	Resource	Weighting %
3/18	Labour: building	17
	Plant	5
	Plastics profiled sheets	68
	Metal discs	4
	Sealants	4
	Fixings	2
3/19	Labour: building	53
	Plant	2
	Polyester resin	24
	Polyurethane core	10
	Glass fibre mat	8
	Timber	1
	Sealants	1
	Fixings	1
3/20	Labour: building	23
	Plant	1
	Concrete tiles	33
	Slates	11
	Battens	9
	Underlay	8
	Clay tiles	7
	Fibre cement slates	5
	Fixings	3
3/21	Labour: plumbing	51
	Plant	1
	Lead sheets	47
	Copper fixings	1
3/22	Labour: building	14
	Plant	1
	Aluminium sheets	72
	Fixings	4
	Insulation	4
	Aluminium sections	4
	Sealants	1
3/23	Labour: building	43
	Plant	1
	Copper sheets	} 56
	Fixings	
3/24	Labour: building	43
	Plant	1
	Zinc sheets	} 56
	Fixings	
3/25	Labour: building	27
	Plant	26
	Asphalt	39
	Felt	6
	Reflective finish	1
	Chippings	1
3/26	Labour: building	29
	Plant	2
	Bitumen	25
	Roofing felt	21
	Fibreboard	11
	Polystyrene	5
	Aluminium trim	3
	Fibre cement tiles	3
	Chippings	1

Work Category	Resource	Weighting %
3/27	Labour: building	54
	Plant	2
	Waterproof coatings	44
3/28	Labour: building	43
	Plant	2
	Softwood	40
	Softwood fittings	11
	Fixings	3
	Mastic	1
3/29	Labour: building	38
	Plant	1
	Hardwood	36
	Hardwood board flooring	10
	Hardwood fittings	9
	Hardwood strip flooring	2
	Fixings	3
	Mastic	1
	3/30	Labour: building
Plant		1
Manufactured boards		23
Woodwool slabs		10
Plywood and blockboard		9
Insulation board		6
Fixings		3
Mastic		1
3/31	Labour: building	49
	Plant	1
	Plasterboard	31
	Joint filler	6
	Metal components	5
	Insulation	4
	Timber	3
	Fixings	1
3/32	Labour: building	21
	Plant	1
	Manufactured boards	29
	Steel components	10
	Aluminium components	8
	Plastics finishes	6
	Doors	6
	Plasterboard	5
	Timber	4
	Glass	4
	Insulation	2
	Fixings	3
	Mastics	1
3/33	Labour: building	41
	Plant	1
	Mineral fibre tiles	22
	Suspension and framing members	16
	Plasterboard	8
	Metal panels and strips	7
	Fibre cement panels	2
	Metal components	2
	Decorative plastics	1

Work Category	Resource	Weighting %
3/34	Labour: building	26
	Plant	2
	Floor panels: metal	32
	Floor panels: boards	22
	Plastics components	10
	Pedestals	6
	Adhesives	2
3/35	Labour: building	26
	Plant	1
	Softwood windows and doors and frames	70
	Fixings	2
	Sealants	1
3/36	Labour: building	21
	Plant	1
	Hardwood windows and doors and frames	75
	Fixings	2
	Sealants	1
3/37	Labour: building	19
	Plant	1
	Steel windows and doors	79
	Sealants	1
3/38	Labour: building	21
	Plant	1
	Aluminium windows and doors	77
	Sealants	1
3/39	Labour: building	38
	Plant	1
	Plastics windows and doors	55
	Fixings	3
	Sealants	3
3/40	Labour: building	34
	Ironmongery	64
	Fixings	2
3/41	Labour: building	32
	Sheet glass	37
	Double glazing units	19
	Toughened glass	8
	Mirrors	2
	Glazing compounds	2
3/42	Labour: building	46
	Plant	4
	Cement	29
	Sand	16
	Lightweight aggregates	3
	Bonding agents	1
	Steel sundries	1
3/43	Labour: building	45
	Resins	41
	Bitumen	11
	Fillers	3

Work Category	Resource	Weighting %
3/44	Labour: building	72
	Plant	3
	Plaster	21
	Metal beads	1
	Sand	1
	Cement	1
	Precast plaster mouldings	1
3/45	Labour: building	34
	Glazed tiles	27
	Quarry tiles	20
	Terrazzo tiles	11
	Adhesives	5
	Cement	3
3/46	Labour: building	30
	Plastics tiles or sheet	67
	Adhesives	3
3/47	Labour: building	12
	Seamed carpets	53
	Broadloom carpets	34
	Fixings	1
3/48	Labour: building	82
	Emulsions	8
	Oil paints	7
	Decorative papers and fabrics	1
	Filling and stopping	1
	Plastics based paints	1
3/49	Labour: plumbing	36
	Ceramic sanitary ware	23
	Steel sanitary ware	20
	Plastics sanitary ware	11
	Taps, valves, wastes, etc	10
3/50	Labour: building	30
	Glass fibre	30
	Polystyrene	24
	Pipe insulation	9
	Plastics foams	5
	Fixings	1
	Adhesives	1
3/51	Labour: building	14
	Plant	7
	Coated macadam	67
	Asphalt	12
3/52	Labour: building	33
	Plant	4
	Concrete slabs and blocks	36
	Clay bricks	8
	Stone slabs	6
	Kerbs, edgings and channels	5
	Sand	4
	Cement	2
	Lime	2
3/53	Labour: building	24
	Plant	11
	Trees and shrubs	59
	Grass seed	6

Work Category	Resource	Weighting %
3/54	Labour: building	28
	Plant	2
	Softwood posts, rails and boarding	17
	Chain link fencing	16
	Steel units	15
	Concrete posts	12
	Hardwood posts, rails and boarding	7
	Fixings	1
	Aggregates	1
	Cement	1
	3/55	Labour: plumbing
Cast iron pressure pipes and fittings		24
Spun iron pressure pipes and fittings		22
Cast iron drain pipes and fittings		12
Lead		1
3/56	Labour: plumbing	39
	Tanks	42
	Steel pipes and fittings	19
3/57	Labour: plumbing	53
	Plastics pipes and fittings	41
	Tanks	6
3/58	Labour: plumbing	38
	Copper pipes	22
	Copper fittings	21
	Copper cylinders	15
	Plumbers' brassware	4
3/59	Labour: plumbing	35
	Aluminium pipes and fittings	65
3/60	Labour: building	29
	Plant	2
	Clay pipes and fittings	51
	Concrete pipes and fittings	16
	Sand	1
	Cement	1

Appendix B-1: List of Work Categories (Series 2 revised) (rule 3)

- 2/1 Demolitions
- 2/2 Site preparation, excavation and disposal
- 2/3 Hardcore and imported filling
- 2/4 General piling
- 2/5 Steel sheet piling
- 2/6 Concrete
- 2/7 Reinforcement
- 2/8 Structural precast and prestressed concrete units
- 2/9 Non-structural precast concrete components
- 2/10 Formwork
- 2/11 Brickwork and blockwork
- 2/12 Natural stone
- 2/13 Asphalt work
- 2/14 Slate and tile roofing
- 2/15 Asbestos-cement sheet roofing and cladding
- 2/16 Plastic coated steel sheet roofing and cladding
- 2/17 Aluminium sheet roofing and cladding
- 2/18 Built-up felt roofing
- 2/19 Built-up felt roofing on metal decking
- 2/20 Carpentry, manufactured boards and softwood flooring
- 2/21 Hardwood flooring
- 2/22 Tile and sheet flooring
- 2/23 Jointless flooring (epoxy resin type)
- 2/24 Softwood joinery
- 2/25 Hardwood joinery
- 2/26 Ironmongery
- 2/27 Steelwork
- 2/28 Steel windows and doors
- 2/29 Aluminium windows and doors
- 2/30 Miscellaneous metalwork
- 2/31 Cast iron pipes and fittings
- 2/32 Plastic pipes and fittings
- 2/33 Copper tubes, fittings and cylinders
- 2/34 Mild steel pipes, fittings and tanks
- 2/35 Boilers, pumps and radiators
- 2/36 Sanitary fittings
- 2/37 Insulation
- 2/38 Plastering (all types) to walls and ceilings
- 2/39 Beds and screeds (all types) to floors, roofs and pavings
- 2/40 Dry partitions and linings
- 2/41 Tiling and terrazzo work
- 2/42 Suspended ceilings (dry construction)
- 2/43 Glass, mirrors and patent glazing
- 2/44 Decorations
- 2/45 Drainage pipework (other than cast iron)
- 2/46 Fencing, gates and screens
- 2/47 Bituminous surfacing to roads and paths
- 2/48 Soft landscaping
- 2/49 Leadwork

Appendix B-2: 'Fix-only' indices (Series 2 revised) (rule 8(iii))

- A**
- (1) Where there is a significant value of work in respect of items of 'fix-only' falling within one Work Category, it may be appropriate to create a special 'fix-only' index. Such items must be identified in the Schedule and shall be subject to adjustment in accordance with the Formula Rules so far as relevant and applicable as if 'fix-only' in each Work Category or Work Group were a separate Work Category or Work Group.
- (2) The calculation of a 'fix-only' Index Number is demonstrated by the following example for the fixing only of precast concrete structural units which are supplied against a P.C. rate/P.C. Sum.
- (a) 'Price adjustment formulae for building contracts (Series 2 revised) – Description of the indices' published by HMSO sets out the resources for Work Category 2/8 'Structural precast and prestressed concrete units' weighted in terms of percentage value as follows:
- | | |
|-----------------------------|-------------------|
| Labour (skilled) | 6% |
| Labour (unskilled) | 6% |
| Plant | 6% |
| Structural precast concrete | 79% |
| Cement | 2% |
| Aggregate | 1% |
| Sand | *(less than 0.5%) |
| Reinforcement | *(less than 0.5%) |
| | <u>100%</u> |
- (b) The published Index Numbers for a specified month are say, 158 skilled labour, 158 unskilled labour and 170 plant.
- (c) A 'fix-only' Index Number for that month of the labour and plant required for fixing only precast concrete structural units may be calculated as follows:
- | | | |
|------------------|-----------|-------------|
| Skilled labour | 6 x 158 = | 948 |
| Unskilled labour | 6 x 158 = | 948 |
| Plant | 6 x 170 = | 1020 |
| Total percentage | <u>18</u> | <u>2916</u> |
- 'Fix-only' Index Number
for fixing only precast
concrete structural units
- $$\frac{2916}{18} = 162$$
- (d) It will be necessary to calculate the 'fix-only' Index Number for the Base Month and for each month in which the Index Number is subsequently to be used.
- (3) The 'fix-only' Index Numbers so calculated are to be applied to the value of the 'fix-only' items and no separate adjustment made for the ancillary materials (cement, aggregate, etc.).

- B** The percentages of skilled labour, unskilled labour and plant for each Work Category and which will be needed for calculating a 'fix-only' Index Number are set out below.
(Source: 'Price adjustment formulae for building contracts (Series 2 revised) – Description of the indices')

Work Category	Resource	%
2/1	Labour (skilled)	36
	Labour (unskilled)	14
	Plant	44
2/2	Labour (skilled)	1
	Labour (unskilled)	37
	Plant	56
2/3	Labour (unskilled)	28
	Plant	11
2/4	Labour (skilled)	32
	Labour (unskilled)	7
	Plant	22
2/5	Labour (skilled)	6
	Labour (unskilled)	7
	Plant	23
2/6	Labour (skilled)	5
	Labour (unskilled)	26
	Plant	3
2/7	Labour (skilled)	16
	Labour (unskilled)	8
2/8	Labour (skilled)	6
	Labour (unskilled)	6
	Plant	6
2/9	Labour (skilled)	17
	Labour (unskilled)	23
2/10	Labour (skilled)	53
	Labour (unskilled)	11
	Plant	1
2/11	Labour (skilled)	37
	Labour (unskilled)	17
	Plant	1
2/12	Labour (skilled)	16
	Labour (unskilled)	15
2/13	Labour (skilled)	20
	Labour (unskilled)	9
	Plant	29
2/14	Labour (skilled)	13
	Labour (unskilled)	10
2/15	Labour (skilled)	13
	Labour (unskilled)	15
2/16	Labour (skilled)	9
	Labour (unskilled)	10
2/17	Labour (skilled)	6
	Labour (unskilled)	7
2/18	Labour (skilled)	23
	Labour (unskilled)	12

Work Category	Resource	%
2/19	Labour (skilled)	19
	Labour (unskilled)	7
2/20	Labour (skilled)	40
	Labour (unskilled)	7
2/21	Labour (skilled)	27
2/22	Labour (skilled)	26
2/23	Labour (skilled)	35
2/24	Labour (skilled)	34
	Labour (unskilled)	3
2/25	Labour (skilled)	25
	Labour (unskilled)	2
2/26	Labour (skilled)	31
	Labour (unskilled)	2
2/27	Labour (skilled)	9
	Labour (unskilled)	15
2/28	Labour (skilled)	15
	Labour (unskilled)	9
2/29	Labour (skilled)	16
	Labour (unskilled)	7
2/30	Labour (skilled)	7
	Labour (unskilled)	15
2/31	Labour (Plumbing)	37
2/32	Labour (Plumbing)	48
2/33	Labour (Plumbing)	34
2/34	Labour (Plumbing)	33
2/35	Labour (Plumbing)	23
2/36	Labour (Plumbing)	30
2/37	Labour (skilled)	29
	Labour (unskilled)	9
2/38	Labour (skilled)	49
	Labour (unskilled)	22
	Plant	3
2/39	Labour (skilled)	26
	Labour (unskilled)	22
	Plant	5
2/40	Labour (skilled)	42
	Plant	1
2/41	Labour (skilled)	26
	Labour (unskilled)	8
2/42	Labour (skilled)	32
2/43	Labour (Glazing)	31
2/44	Labour (skilled)	80

Work Category	Resource	%
2/45	Labour (skilled)	15
	Labour (unskilled)	14
2/46	Labour (skilled)	9
	Labour (unskilled)	16
	Plant	1
2/47	Labour (skilled)	11
	Labour (unskilled)	5
	Plant	8
2/48	Labour (skilled)	37
	Labour (unskilled)	11
	Plant	22
2/49	Labour (skilled)	40

Formula Rules (Sub-Contract)

Section 1

Use, Definitions and General Rules

- 1 a These Rules are the Formula Rules referred to in paragraph C.1.1.1 of JCT Fluctuations Option C for:

<i>Title</i>	<i>Short Reference in these Rules</i>
Intermediate Named Sub-Contract 2016 Edition	ICSub/NAM
Standard Building Sub-Contract 2016 Edition	SBCSub
Standard Building Sub-Contract with sub-contractor's design 2016 Edition	SBCSub/D
Design and Build Sub-Contract 2016 Edition	DBSub
Management Works Contract 2016 Edition	MCWC
Construction Management Trade Contract 2016 Edition	CM/TC

- b Where in these Rules the terms Sub-Contract, Sub-Contractor or Sub-Contract Works are used, they respectively include Works Contract, Works Contractor, Works Contract Works and Trade Contract, Trade Contractor, Trade Contract Works, as appropriate.

- 2 Information necessary for Formula adjustment is set out within the particulars for JCT Fluctuations Option C for whichever of the documents referred to in rule 1a above is relevant (the Relevant Document).

Definitions

- 3 In Fluctuations Option C (as defined hereunder) and in these Rules, the following definitions apply together with, as far as relevant and applicable, the definitions in the Conditions.

Balance of Adjustable Work: the work which is properly subject to Formula adjustment but which is neither allocated to a Works Category nor is Specialist Engineering Work.

Notes:

1. *Such Balance will include preliminary and general items, water, insurance, adjustments on the tender summary and similar matters.*
2. *Where specifically so stated in the Sub-Contract Documents it shall also include work undertaken by the Sub-Contractor which cannot be allocated to a Work Category.*
3. *For the treatment of Provisional Sums, see rule 16.*
4. *For work or items excluded from Formula adjustment see rule 4.*

Base Month: the calendar month recorded in the Relevant Document. *Note: unless tenderers are otherwise informed the Base Month will normally be the calendar month prior to that in which the tender is due to be returned.*

Conditions: the Conditions of the relevant contract referred to in rule 1a.

Fluctuations Option C: JCT Fluctuations Option C (Formula adjustment) for ICSub/NAM, MCWC and SBCSub, SBCSub/D, DBSub and CM/TC.

Formula adjustment: adjustment in accordance with relevant Fluctuations Option C and these Rules.

Index Number: the provisional or firm Index Number for the month for any of the indices published in the Monthly Bulletins.

Interim Valuation:

for ICSUB/NAM, an interim valuation as referred to in JCT Fluctuations Option C for the purposes of clause 4.7 of the Conditions;

for SBCSUB, SBCSUB/D, DBSUB and MCWC, an interim valuation as referred to in JCT Fluctuations Option C for the purposes of clause 4.9 of the Conditions;

for CM/TC, an interim valuation as referred to in JCT Fluctuations Option C for the purposes of clause 4.13 of the Conditions.

Mid-point: where the Valuation Period comprises an even number of days the Mid-point for the purpose of operating any of the formulae in these Rules which refer to Mid-point shall be deemed to be the Mid-point of such Period after deducting the last day of that Period.

Monthly Bulletins: for building (and ancillary engineering works) and specialist engineering installations, the 'BCIS Price Adjustment Formulae Indices Online (PAFI)'.

Non-Adjustable Element: that amount which will be deducted by way of abatement from the amount of adjustment otherwise payable. This amount shall be such percentage as is stated in the Relevant Document of the amount of the adjustment.

Part I, Part III: those Parts of Section 2 of these Rules.

Relevant Document: see rule 2.

Schedule: the Schedule referred to in rule 11.

Specialist Engineering Work: any work to be executed by the Sub-Contractor for which one of the specialist engineering formulae in Part III of these Rules is appropriate to adjust the price for that work.

Valuation Period: the period ending on the date of any Interim Valuation and beginning on the day following the date of the immediately preceding Interim Valuation provided, unless otherwise agreed, that the first Valuation Period shall commence on the date when the Sub-Contractor commences work on site.

Valuation Rules: the rules set out in section 5 of the Conditions.

Value of Work: for any Valuation Period shall be the difference (which may be positive or negative) between the Gross Valuation, as defined hereunder, ascertained at the end of the Valuation Period and that ascertained at the end of the previous Valuation Period after having excluded from both those Gross Valuations the amounts for Formula adjustment and the amounts excluded from Formula adjustment under rule 4. The '**Gross Valuation**' is:

as defined in the relevant Conditions except for ICSUB/NAM;

where it is for ICSUB/NAM, the total value calculated in accordance with clause 4.7 of the Conditions but without the application of the applicable retention percentage referred to in clause 4.7.1.

Work Category: one of the Work Categories (Series 3 or Series 2 revised as identified in the Schedule) listed in Appendix A-1 and B-1 to these Rules. Where the applicable Series is not identified in the Schedule or otherwise clear from the context, Series 3 will apply. The brief descriptive headings of each Work Category are intended to include all work of a generally similar nature within the Category. *Note: Series 2 revised may be discontinued and withdrawn by the BCIS.*

Exclusion from adjustment

- 4 Formula adjustment shall not apply to:
- (i) amounts for work valued as daywork under the Valuation Rules;
 - (ii) amounts for articles manufactured outside the United Kingdom which the Sub-Contractor is required by the Sub-Contract to purchase and import or have imported for direct incorporation into the Sub-Contract Works and which require no processing prior to such incorporation and which are specifically identified in Sub-Contract documents; *Note: Fluctuations in the price of such articles is dealt with under paragraph C.3 of Fluctuations Option C.*
 - (iii) amounts for work which is valued under the Valuation Rules at a fair valuation on rates and prices current when the work is carried out or on some basis which is not referable to the level of prices in the Sub-Contract unless made subject to Formula adjustment by the operation of rule 25;
 - (iv) amounts for unfixed materials and goods for which the Sub-Contractor is entitled to payment under the Conditions except where rules 58, 63 or 69 apply;
 - (v) amounts for direct loss and/or expense ascertained under the Conditions (ICSub/NAM clauses 4.11 and 4.12, SBCSub, SBCSub/D, DBSub and MCWC clauses 4.14 and 4.15, CM/TC clauses 4.19 and 4.20);
 - (vi) any other amount payable to the Sub-Contractor which is based on the actual costs incurred by him;
 - (vii) amounts excluded from Formula adjustment by the operation of rules 14 and 15.
 - (viii) amounts for design work where separately identified in any analysis of the Sub-Contractor's Designed Portion or Sub-Contractor's Designed Works.

Correction of errors

- 5 a The adjustments effected in accordance with the Conditions shall be corrected where this is necessary because of:
- (i) arithmetical errors in the calculation of the adjustment made;
 - (ii) incorrect allocation of value to Work Categories (where Part I of these Rules applies);
 - (iii) incorrect allocation of work as Specialist Engineering Work;
 - (iv) use of an incorrect Index Number or Index Numbers.
- b Where the Sub-Contractor so requests for the purpose of ascertaining whether the matters referred to in rule 5a have occurred in relation to any Formula adjustment which has been effected, the Contractor/Management Contractor/Construction Manager shall ensure that there are made available to the Sub-Contractor such working documents relating thereto as may enable him so to ascertain; provided that any request is made within a reasonable time after the date when that Formula adjustment was effected.
- c Where a correction is made in accordance with rule 5a whether or not as a result of the operation of rule 5b, such correction shall be made using the same index Numbers (but corrected where necessary by the application of rule 5a(iv)) used for calculating the adjustment previously, though incorrectly, made except that firm Index Numbers shall be used if available.

- 6 (Number not used)

Structural steelwork

- 7 All Sub-Contract Formula adjustment of structural steelwork shall be effected only by the operation of the formula in Part III rule 63 notwithstanding that Part I applies to Formula adjustment for the value of other Sub-Contract Works.

'Fix-only' Work – Direct Supplies by others

- 8 Formula adjustment in respect of the work of fixing materials or goods not supplied by the Sub-Contractor shall be in accordance with whichever of the methods below has been recorded in the Relevant Document or, where there is no such record, in accordance with whichever of the methods below has been agreed in writing:
- (i) by inclusion in an appropriate Work Category which has been specifically stated in the Relevant Document or specifically agreed in writing in aforesaid; or
 - (ii) by inclusion in the Balance of Adjustable Work; or
 - (iii) by application of a 'fix-only' index created in accordance with the method set out in Appendix A-2 and B-2 of these Rules.

Section 2

Part I: Work Category Method; separate application of the Work Category Index Numbers

The formula

- 9 The formula for adjustment of the Value of Work allocated to Work Categories under Part I of these Rules for Valuation Periods up to and including the Valuation Period in which occurs the date of practical completion of the Sub-Contract Works is as follows:

$$C = \frac{V(l_v - l_o)}{l_o}$$

where

C = the amount of the adjustment for the Work Category to be paid to, or recovered from the Sub-Contractor.

V = the Value of Work in the Work Category for the Valuation Period.

l_v = the Index Number for the Work Category for the month during which the Mid-point of the Valuation Period occurred.

l_o = the Index Number for the Work Category for the Base Month.

Note: Any sum included in the valuation in respect of the Balance of Adjustable Work will also be subject to adjustment (see rule 26).

Application of the Rules

- 10 Part I of these Rules shall be applicable, except to the extent that Part III is applicable as stated in the Relevant Document.

Allocation to Work Categories, etc.

- 11 a Where the tender for the Sub-Contract Works is to be obtained from Bills of Quantities priced by the tenderer, the Bills shall include a Schedule which has been issued to the Sub-Contractor when tendering and which will indicate to which of the following each item in the Bills is allocated: one of the Work Categories; 'fix only' work under rule 8(iii); Specialist Engineering Work; Provisional Sum work subject to Formula adjustment (rule 16); Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4. Alternatively, the allocation shall be effected by annotation of each item in the Bills of Quantities issued to the Sub-Contractor when tendering and such annotations shall constitute the Schedule.
- b Where Bills of Quantities are not used to obtain the tender for the Sub-Contract Works the Sub-Contract Documents shall include a Schedule which sets out: (i) an itemised description of the Sub-Contract Works (which shall be in sufficient detail for the purposes of Formula adjustment), (ii) the amount included for each item in the Sub-Contract Sum or Tender Sum, and (iii) to which of the following each item is allocated: one of the Work Categories; "fix-only" work under rule 8 (iii); Specialist Engineering Work; Provisional Sum work subject to Formula adjustment (rule 16); Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4.
- c The Sub-Contractor shall be deemed for the purposes of Fluctuations Option C and these Rules but not further or otherwise to have agreed the allocation of the items in the Schedule.

External works

- 12 Work Categories 2/45, 2/46, 2/47 and 2/48 relate only to drainage pipework (other than cast iron), fencing, gates and screens, bituminous surfacing to roads and paths, and soft landscaping and Work Categories 3/51, 3/52, 3/53, and 3/54 relate only to coated macadam and asphalt paving, slab and block paving, site planting and fencing. All other items for external works and services must be allocated among the other Work Categories and that part of the Schedule related to external work must identify the Work Category in which each such item falls.

Multiple Work Category Items

- 13 a Any item in the Schedule which refers to works in more than one Work Category shall be allocated to the most significant Work Category represented within the item.
- b Where a section of work includes items of work relating to several different Work Categories and such items are of relatively low value, all of the items may be allocated to the most significant Work Category represented in the group.

Old materials

- 14 Where any credit is allowed by the Sub-Contractor for old materials arising from the Sub-Contract Works such credit shall not be subject to Formula adjustment.

P.C. rates/P.C. Sum

- 15 The value of work described in the Sub-Contract by reference to P.C. rates/P.C. Sum shall not be subject to Formula adjustment.

Provisional Sums

- 16 The value of work executed by the Sub-Contractor in accordance with instructions as to the expenditure of Provisional Sums included in the Sub-Contract shall be allocated to Work Categories; 'fix-only' work under rule 8(iii); Specialist Engineering Work; Balance of Adjustable Work; or work excluded from Formula adjustment under rule 4.
- 17 (Number not used)

Price level

- 18 The level of the prices in the Sub-Contract shall be deemed to be that represented by the firm Index Numbers published in the Monthly Bulletins for the Base Month.
- 19 (Number not used)

Formula adjustment – Valuation Periods up to practical completion of the Sub-Contract Works

- 20 The Value of Work in each Valuation Period up to and including the Valuation Period in which occurs the date of practical completion of the Sub-Contract Works shall be allocated in accordance with the Schedule.
- 21 a The amount of adjustment in respect of Value of Work allocated to Work Categories shall be calculated by the application of the formula in rule 9.
- b The amount of adjustment in respect of Value of Work allocated to Balance of Adjustable Work shall be calculated in accordance with rule 26a and b.
- 22 Formula adjustment in respect of Specialist Engineering Work shall be in accordance with Part III of these Rules.
- 23 a The Index Numbers used for calculating Formula adjustment shall be the last published provisional Index Numbers for each Work Category together with the firm Index Numbers current for the Base Month; where firm Index Numbers for the Base Month are not available Formula adjustment shall be by reference to the provisional Index Numbers for the Base Month.

- b Firm Index Numbers for the appropriate month shall be substituted for any provisional Index Numbers as soon as available and any alteration to the adjustment under the provisional Index Numbers shall wherever practicable be made in the next payment notice/certificate for payment following publication of the firm Index Number.
- c In the event of an Index Number published as firm being revised any alteration to earlier adjustments which results from the application of the revised firm Index Number shall wherever practicable be made in the next payment notice/certificate for payment following publication of such revision.

Valuation Rules – application of the formula

- 24 Work valued under the Valuation Rules shall be subject to Formula adjustment wherever the valuation is determined by or based upon rates and prices included in the Sub-Contract or based upon rates and prices current at the Base Month.
- 25 Any work valued under the Valuation Rules the execution of which is:
 - (i) to be executed over an extended period, and
 - (ii) the valuation of which is on a basis other than those referred to in rule 24,
 may notwithstanding (ii) above be subject to Formula adjustment as follows: a new Base Month, specifically for that work, which is appropriate to the level of the rates and prices or values used in the valuation shall be agreed in writing and the formula shall then be separately applied for the Valuation Periods during which the work is executed using the new Base Month.

Adjustment for Balance of Adjustable Work

- 26 a Subject to rule 26b the adjustment of any portion of the Balance of Adjustable Work in the Value of Work for a Valuation Period shall be calculated by applying the following formula:

$$C = V_b \times \frac{C_c}{V_c}$$

where

C = the amount of the adjustment for the Balance of Adjustable Work to be paid to, or recovered from, the Sub-Contractor.

V_b = the Value of Work in the Balance of Adjustable Work for the Valuation Period.

C_c = the total amount of the adjustment for all Work Categories for the Valuation Period to be paid to, or recovered from, the Sub-Contractor in accordance with rule 9.

V_c = the total Value of Work in all Work Categories for the Valuation Period.

- b Where the Value of Work in any Valuation Period contains no work allocated to Work Categories any Balance of Adjustable Work included in the Value of Work shall, unless otherwise agreed, be allocated to Work Category 2/1 (where Series 2 applies) or Work Category 3/01 (where Series 3 applies) and adjusted in accordance with rule 9.

Unfixed Materials and Goods

- 27 a The value of unfixed materials and goods shall not be subject to Formula adjustment. *Note: when they are incorporated in the Sub-Contract Works the value of the work so executed including the value of the materials or goods will be subject to rules 21 to 23.*
- b If it is stated in the Sub-Contract that early delivery of any materials and goods specified therein is required, then adjustment in respect of work incorporating these specified materials and goods may be subject to special arrangements provided always that full details of these special arrangements have been set out in the tender documents sent to the Sub-Contract and recorded in the Sub-Contract.

Formula adjustment – Valuation Periods after practical completion of the Sub-Contract Works, final payment

- 28 For the Formula adjustment of:
 - (i) any Value of Work, other than Specialist Engineering Work, for a Valuation Period subsequent to the Valuation Period in which occurs the date of practical completion of the Sub-Contract Works; and
 - (ii) amounts included in the final payment which are subject to Formula adjustment under Part I and which have not been so adjusted in previous payment notices/certificates for payment, notwithstanding rule 21, the formula is as follows:

$$C = \frac{V \times C_t}{V_t}$$

where

C = the amount of the Formula adjustment to be paid to, or recovered from, the Sub-Contractor.

V = the Value of Work described at rule 28(i) or the amounts described at rule 28(ii).

C_t = the net total of the Formula adjustment included in previous payment notices/certificates for payment by the use of the formulae set out in rules 9 and 26a.

V_t = the total Value of Work not being Specialist Engineering Work included in previous payment notices/certificates for payment.

Part II: Work Group method using Weighted Work Group Indices

29 – (Numbers not used)
39

Part III: Application of the Formula Method to certain Specialist Engineering Installations carried out by the Sub-Contractor as Specialist Engineering Work

General

- 40** The definitions in rule 3 shall apply to Part III of these Rules so far as the definitions are not specifically varied in this Part.
- 41** The value of unfixed materials and goods shall not be taken into account for adjustment except where rule 58 (Lift installations) or rule 63 (Structural Steelwork installations) or rule 69 (Catering equipment installations) apply.
- 42** Part III of these Rules shall apply to the following Specialist Engineering Work:
- (i) Electrical installations;
 - (ii) Heating, ventilating and air conditioning installations and sprinkler (Mechanical) installations;
 - (iii) Lift installations;
 - (iv) Structural steelwork installations;
 - (v) Catering equipment installations;
- for which specialist formulae Index Numbers are published in the Monthly Bulletins.
- 43** The Relevant Document shall state the weightings of labour and material for Specialist Engineering Work to which rule 50 (Electrical installations) and rule 54 (Heating, ventilating and air conditioning installations and sprinkler (Mechanical) installations) apply. The Sub Contractor shall be deemed for the purposes of Fluctuations Option C and Part III of these Rules but not further or otherwise to have agreed the weightings so stated. *Note: See also rules 64 and 72b.*
- 44**
- a The Index Numbers used for calculating adjustment shall be the firm Index Numbers for the factors defined in the formulae in rules 50, 54, 58, 63 and 69.
 - b Until firm Index Numbers are published the last published provisional Index Numbers shall be used. Firm Index Numbers for the appropriate month shall be substituted for any provisional Index Numbers as soon as available and any alteration to the adjustment under the provisional Index Numbers shall wherever practicable be made in the next payment notice/certificate for payment following publication of the firm Index Numbers. In the formulae for Lift installations and Structural steelwork installations the latest published provisional Index Numbers for labour shall be used (even though for an earlier month than that required).
Note: The labour Index Numbers for these formulae are calculated on the basis of four-month moving averages. These Index Numbers are necessarily published in the Monthly Bulletin up to three months later. Accordingly the latest published Numbers should always be used pending publication of the provisional/firm Index Numbers for the relevant month.
 - c In the event of an Index Number published as firm being revised any alteration to earlier adjustment which results from the application of the revised firm Index Numbers shall wherever practicable be made in the next payment notice/certificate for payment following publication of such revision.
- 45** (Number not used)
- 46** (Number not used)
- 47** Subject to rule 48 the application of the specialist formulae in Part III of these Rules shall be in accordance with the rules in Part I so far as relevant and applicable and so far as these Rules are not specifically varied in this Part.
- 48** Adjustment under the formulae for Lift Installations in rule 58 shall be effected in accordance with rule 61 and any payments due shall be included in the next payment notice/certificate for payment after the events referred to in rule 61 have occurred.

Formula adjustment – Valuation Periods up to practical completion

- 49 a For Valuation Periods up to and including the Valuation Period in which occurs the date of practical completion, amounts subject to Formula adjustment shall be adjusted using the relevant formula of those in rules 50, 54, 58, 63 and 69.

Formula adjustment – Valuation Periods after practical completion of Sub-Contract Works, final payment

- b For each installation, for the Formula adjustment of
- (i) any Value of Work for a Valuation Period subsequent to the Valuation Period in which occurs the date of practical completion; and
 - (ii) amounts included in the final payment which are subject to Formula adjustment and which have not been so adjusted in previous payment notices/certificates for payment;

notwithstanding rules 50, 54, 58, 63 and 69, the formula is as follows:

$$C = \frac{V \times C_t}{V_t}$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Sub-Contractor.
V = the Value of Work described at rule (i) above or the amounts described at (ii) above.
C_t = the net total of the Formula adjustment included in previous payment notices/certificates for payment by the use of the formulae set out in rule 50, 54, 58, 63 or 69 whichever is relevant.
V_t = the total Value of Work for the relevant installation included in previous payment notices/certificates for payment.

Electrical installations

The formula

- 50 The formula is as follows:

$$C = V \left[\frac{A(L_{ev} - L_{eo})}{L_{eo}} + \frac{B(M_{ev} - M_{eo})}{M_{eo}} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Sub-Contractor.
V = the value of electrical installations included in the Value of Work for the Valuation Period.
A = the weighting allotted to labour.
B = the weighting allotted to materials. *Note: A + B = 1.00.*
L_{ev} = the Index Number for labour for the month during which the Mid-point of the Valuation Period occurred.
L_{eo} = the Index Number for labour for the Base Month.
M_{ev} = the Index Number for materials one month before the month in which the Mid-point of the Valuation Period occurred.
M_{eo} = the Index Number for materials one month before the Base Month.

- 51 (Number not used)

Application of the weightings

- 52 The weightings stated in the Relevant Document in accordance with rule 43 shall apply to all work in the installation to which they relate which is Specialist Engineering Work including that carried out as a Variation.

- 53 (Number not used)

Heating, ventilating and air conditioning installations and sprinkler installations

The formula

54 The formula is as follows:

$$C = V \left[\frac{A(L_{mv} - L_{mo})}{L_{mo}} + \frac{B(M_{mv} - M_{mo})}{M_{mo}} \right]$$

where

C = the amount of the Formula adjustment to be paid to, or recovered from, the Sub-Contractor.

V = the value of heating, ventilating and air conditioning installations and/or sprinkler installations included in the Value of Work for the Valuation Period.

A = the weighting allotted to labour.

B = the weighting allotted to materials. *Note: A + B = 1.00.*

L_{mv} = the Index Number for labour for the month during which the Mid-point of the Valuation Period occurred.

L_{mo} = the Index Number for labour for the Base Month.

M_{mv} = the Index Number for materials one month before the month in which the Mid-point of the Valuation Period occurred.

M_{mo} = the Index Number for materials one month before the Base Month.

55 a The separate materials index for sprinkler installations shall be used if so stated in the Relevant Document.

b Where the Sub-Contract Works include both heating, ventilating and air conditioning installation and a sprinkler installation and for the latter a different labour/materials weighting is to be used and/or the separate sprinkler installation materials index is to be used, the two installations shall be treated separately for the application of the formula in rule 54, each with its own value 'V'.

Application of the weightings

56 The weightings stated in the Relevant Document in accordance with rule 43 shall apply to all work in the installations to which they relate which is Specialist Engineering Work including that carried out as a Variation.

57 (Number not used)

Lift installations

The formulae

58 The formulae are as follows:

a for shop fabrication

$$C = V \left[\frac{0.47 \left(\frac{L_{mx} + L_{mc}}{2} - L_{mo} \right)}{L_{mo}} + \frac{0.18(M_{mx} - M_{mo})}{M_{mo}} + \frac{0.12(M_{ex} - M_{eo})}{M_{eo}} \right]$$

b for site installations

$$C = V \left[\frac{0.23 \left(\frac{L_{es} + L_{ec}}{2} - L_{eo} \right)}{L_{eo}} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from, the Sub-Contractor.
- V = the value of Lift installations in the Sub-Contract excluding any amounts to which rule 4 applies.
- L_{mo} = the Index Number for mechanical labour for the Base Month.
- L_{eo} = the Index Number for electrical labour for the Base Month.
- L_{mx} = the Index Number for mechanical labour three months prior to the month in which completion of manufacture occurred.
- L_{mc} = the Index Number for mechanical labour for the month in which completion of manufacture occurred.
- L_{es} = the Index Number for electrical labour for the month in which commencement of site installation occurred.
- L_{ec} = the Index Number for electrical labour for the month in which completion of site installation occurred.
- M_{mo} = the Index Number for mechanical materials for the month before the Base Month.
- M_{eo} = the Index Number for electrical materials for the month before the Base Month.
- M_{mx} = the Index Number for mechanical materials four months prior to the month in which completion of manufacture occurred.
- M_{ex} = the Index Number for electrical materials four months prior to the month in which completion of manufacture occurred.

59 The weightings allocated to the Index Numbers in the formula in rule 58 are fixed as follows:

Item	Weighting
Mechanical labour involved in shop fabrication	0.47
Electrical labour involved in site installation	0.23
Mechanical materials	0.18
Electrical materials	<u>0.12</u>
	<u>1.00</u>

The above weightings apply to all Lift installation work which is Specialist Engineering Work including that carried out as a Variation.

60 (Number not used)

Application of the formulae

- 61 a Adjustment under the formula in rule 58a shall be effected in respect of shop fabrication either upon completion of manufacture of all fabricated components or upon their delivery to site as recorded in the Relevant Document.
- b Adjustment under the formula in rule 58b shall be made upon completion of the installation.

Structural steelwork installations

The formula

62 Application of rules 63 to 67 applies notwithstanding that Part 1 generally applies to Formula adjustment for the value of the Sub-Contract Works.

63 The formula is as follows:

$$C = \left[V_m \times \frac{M_d - M_o}{M_o} \right] + \left[V_f \times \frac{L_f - L_o}{L_o} \right] + \left[V_e \times \frac{L_e - L_o}{L_o} \right]$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from the Sub-Contractor.
- V_m = the weight in tonnes of steel delivered to site during the Valuation Period (the value of which is to be included in an Interim Valuation) multiplied by the average price of steel recorded in the Relevant Document in accordance with rule 64.
- V_f = the value of fabrication and delivery obtained by deducting the amount V_m and the amount V_e from the value of structural steelwork installations included in the Value of Work for the Valuation Period. *Note: The exclusion of the value of unfixed materials from the Formula adjustment in rule 4(iv) does not apply to adjustment under rule 63. Therefore, in the calculation of Value of Work in accordance with rule 3, each of the total valuations referred to will include the value of unfixed materials and goods for which the Sub-Contractor is entitled to payment. By virtue of rule 66a, however, they will not include any value of off-*

- site materials or goods which may be included in an Interim Valuation.*
- V_e = the weight in tonnes of steel erected during the Valuation Period multiplied by the average price of erection recorded in the Relevant Document in accordance with rule 64.
- M_d = the Index Number for structural steel for the month in which the date seven weeks before delivery to site occurred.
- M_o = the Index Number for structural steel for the month before the Base Month.
- L_f = the Index Number for labour for the month in which the date three weeks before delivery to site occurred.
- L_e = the Index Number for labour for the month in which the Mid-point of the Valuation Period occurred.
- L_o = the Index Number for labour for the Base Month.

- 64** The following prices, as stated by the Sub-Contractor, shall be recorded in the Relevant Document:
- (i) the average price per tonne included in the Sub-Contract Sum or Tender Sum of steel delivered to fabricator's works (used to calculate factor V_m in the formula);
 - (ii) the average price per tonne included in the Sub-Contract Sum or Tender Sum for erection of steelwork (used to calculate factor V_e in the formula).

- 65** (Number not used)

Application of the formula

- 66**
- a Formula adjustment shall not be applied to the value of off-site materials and goods included in a valuation.
 - b The Sub-Contractor shall notify the Contractor/Management Contractor/Construction Manager of the weight and date of each delivery of fabricated steel to the site in order that the amount of V_m and the Index Numbers M_d and L_f can be determined.
- 67** Any discrepancy between the total recorded deliveries to site and the final measured weight shall be corrected in the last interim valuation or in the calculations for the final payment for the Sub-Contractor. The Index Number to be used for the purposes of rule 67 shall be that appropriate to the last recorded delivery to the site.

Catering equipment installations

Definitions

- 68** In rules 68 to 75 the term 'factor items' shall mean items which are standard catalogue items not requiring specific design and manufacture for a particular contract. The term 'materials' shall exclude factor items.

The formulae

- 69** The formulae are as follows:

- a for shop fabrication

$$C = V_f \left[\frac{0.40 \left(\frac{L_{mx} + L_{mo}}{2} - L_{mo} \right)}{L_{mo}} + \frac{0.40(M_{mx} - M_{mo})}{M_{mo}} + \frac{0.20(M_{sx} - M_{so})}{M_{so}} \right]$$

- b for supply of factor items

$$C = V_m \frac{F_{mx} - F_{mo}}{F_{mo}}$$

- c for site installations

$$C = V_1 \frac{F_{md} - F_{mo}}{F_{mo}}$$

where

- C = the amount of the Formula adjustment to be paid to, or recovered from the Sub-Contractor.
- V_f = the amount of the Value of Work for the Valuation Period relating to shop fabrication.
- V_m = the amount of the Value of Work for the Valuation Period relating to the supply of factor items. *Note: The exclusion of the value of unfixed materials from the Formula adjustment in rule 4(iv) does not apply to adjustment under rule 69.*
- V_1 = the amount of the Value of Work for the Valuation Period relating to site installation.
- L_{mo} = the Index Number for mechanical labour for the Base Month.
- L_{mx} = the Index Number for mechanical labour two months prior to the date of delivery to site.
- L_{mc} = the Index Number for mechanical labour for the month in which the date of delivery to site occurs.
- L_{md} = the Index Number for mechanical labour for the month during which the Mid-point of the Valuation Period for site installation occurs.
- F_{mo} = the Index Number for factor items for the month before the Base Month.
- F_{mx} = the Index Number for factor items for the month in which the items are delivered to site.
- M_{mo} = the Index Number for mechanical materials for the month before the Base Month.
- M_{mx} = the Index Number for mechanical materials three months prior to the date of delivery to site.
- M_{so} = the Index Number for stainless steel for the month before the Base Month.
- M_{sx} = the Index Number for stainless steel three months prior to the date of delivery to site.

70 a The apportionment of the value of each item in the Sub-Contract for catering equipment installations between (i) materials and shop fabrication; (ii) supply of factor items and (iii) site installations as stated by the Sub-Contractor shall be recorded in the Relevant Document.

b The Sub-Contractor shall be deemed for the purposes of Fluctuations Option C and Part III of these Rules but not further or otherwise to have agreed the apportionment referred to in rule 70a and recorded in the Relevant Document.

71 (Number not used)

72 a Subject to rule 4 the values of materials and shop fabrication (V_f) factor items (V_m) and site installation (V_1) for a Valuation Period shall be calculated in accordance with the apportionment of the value of the relevant items as recorded in the Relevant Document.

b The weightings allocated to the indices for use in applying the formula in rule 69a (shop fabrication) are fixed as follows and will apply to all shop fabrication for catering equipment installations including that carried out as a Variation.

<i>Item</i>	<i>Weighting</i>
Mechanical labour for shop fabrication	0.40
Mechanical materials for fabrication generally	0.40
Stainless steel for fabrication generally	<u>0.20</u>
	<u>1.00</u>

73 Formula adjustment shall not be applied to the value of off-site materials and goods or factor items included in a valuation.

74 The Sub-Contractor shall notify the Contractor/Management Contractor/Construction Manager of the dates of delivery to the site of materials and factor items.

75 (Number not used)

Appendices to Formula Rules (Sub-Contract)

Appendix A-1: List of Work Categories (Series 3) (rule 3)

- 3/01 Demolitions
- 3/02 Excavation and Disposal
- 3/03 Filling: Imported, Hardcore and Granular
- 3/04 Piling: Concrete
- 3/05 Piling: Steel
- 3/06 Concrete: In Situ
- 3/07 Concrete: Formwork
- 3/08 Concrete: Reinforcement
- 3/09 Concrete: Precast
- 3/10 Brickwork and Blockwork
- 3/11 Stonework
- 3/12 Softwood Carcassing and Structural Members
- 3/13 Metal: Decking
- 3/14 Metal: Miscellaneous
- 3/15 Cladding and Covering: Glazed
- 3/16 Cladding and Covering: Fibre Cement
- 3/17 Cladding and Covering: Coated Steel
- 3/18 Cladding and Covering: Plastics
- 3/19 Cladding and Covering: Glass Reinforced Plastics
- 3/20 Cladding and Covering: Slate and Tile
- 3/21 Cladding and Covering: Lead
- 3/22 Cladding and Covering: Aluminium
- 3/23 Cladding and Covering: Copper
- 3/24 Cladding and Covering: Zinc
- 3/25 Waterproofing: Asphalt
- 3/26 Waterproofing: Built Up Felt Roofing
- 3/27 Waterproofing: Liquid Applied Coatings
- 3/28 Boards, Fittings and Trims: Softwood
- 3/29 Boards, Fittings and Trims: Hardwood
- 3/30 Boards, Fittings and Trims: Manufactured
- 3/31 Linings and Partitions: Plasterboard
- 3/32 Linings and Partitions: Self Finished
- 3/33 Suspended Ceilings
- 3/34 Raised Access Floors
- 3/35 Windows and Doors: Softwood
- 3/36 Windows and Doors: Hardwood
- 3/37 Windows and Doors: Steel
- 3/38 Windows and Doors: Aluminium
- 3/39 Windows and Doors: Plastics
- 3/40 Ironmongery
- 3/41 Glazing
- 3/42 Finishes: Screeds
- 3/43 Finishes: Bitumen, Resin and Rubber Latex Flooring
- 3/44 Finishes: Plaster
- 3/45 Finishes: Rigid Tiles and Terrazzo Work
- 3/46 Finishes: Flexible Tiles and Sheet Coverings
- 3/47 Finishes: Carpets
- 3/48 Finishes: Painting and Decorating
- 3/49 Sanitary Appliances
- 3/50 Insulation
- 3/51 Pavings: Coated Macadam and Asphalt
- 3/52 Pavings: Slab and Block
- 3/53 Site Planting
- 3/54 Fencing
- 3/55 Pipes and Accessories: Spun and Cast Iron
- 3/56 Pipes and Accessories: Steel

- 3/57 Pipes and Accessories: Plastics
- 3/58 Pipes and Accessories: Copper
- 3/59 Pipes and Accessories: Aluminium
- 3/60 Pipes and Accessories: Clay and Concrete

Appendix A-2: 'Fix-only' indices (Series 3) (rule 8(iii))

A (1) Where there is a significant value of work in respect of items of 'fix-only' falling within one Work Category, it may be appropriate to create a special 'fix-only' index. Such items must be identified in the Schedule and shall be subject to adjustment in accordance with the Formula Rules so far as relevant and applicable as if 'fix-only' in each Work Category were a separate Work Category.

(2) The calculation of a 'fix-only' Index Number is demonstrated by the following example for the fixing only of precast concrete structural units which are supplied against a P.C. rate/P.C. Sum.

(a) 'Price adjustment formulae for construction contracts 1990 Series of Indices: Users Guide' (Building Series 3) published by HMSO sets out the resources for Work Category 3/09 'Concrete: Precast' weighted in terms of percentage value as follows:

Labour: building	24%
Plant	9%
Structural precast concrete	38%
Non-structural units	24%
Integral facings	2%
Cement	2%
Sealants	1%
	100%

(b) The published Index Numbers for a specified month are say, 158 labour and 170 plant.

(c) A 'fix-only' Index Number for that month of the labour and plant required for fixing only precast concrete structural units may be calculated as follows:

Labour	24 x 158 =	3792
Plant	9 x 170 =	1530
Total percentage	33	5322

'Fix-only' Index Number for fixing only precast concrete units $\frac{5322}{33} = 161.27$

(d) It will be necessary to calculate the 'fix-only' Index Number for the Base Month and for each month in which the Index Number is subsequently to be used.

(3) The 'fix-only' Index Numbers so calculated are to be applied to the value of the 'fix-only' items and no separate adjustment made for the ancillary materials (cement, aggregate, etc.).

- B** The percentages of skilled labour, unskilled labour and plant for each Work Category and which will be needed for calculating a 'fix-only' Index Number are set out below.
(Source: 'Price adjustment formulae for construction contracts 1990 Series of Indices: Users Guide' (Building Series 3))

Work Category	Resource	Weighting %
3/01	Labour: building	51
	Plant	43
	Steel shoring	4
	Timber	2
3/02	Labour: building	39
	Plant	55
	Timber support	4
	Steel support	2
3/03	Labour: building	26
	Plant	16
	Hardcore	41
	Sand and gravel	16
	Granite chippings	1
3/04	Labour: building	25
	Plant	28
	Concrete	35
	Reinforcement	12
3/05	Labour: building	16
	Plant	28
	Steel piling	56
3/06	Labour: building	31
	Plant	3
	Concrete	64
	Timber	1
	Plywood	1
3/07	Labour: building	60
	Plant	1
	Backing timber	21
	Facing timber	13
	Steel supports	3
	Fixings	1
	Waffle pans	1
3/08	Labour: building	25
	Plant	1
	Bar reinforcement	56
	Fabric reinforcement	16
	Tying wire	1
Plastic supports	1	
3/09	Labour: building	24
	Plant	9
	Structural precast concrete	38
	Non-structural units	24
	Integral facings	2
	Cement	2
Sealants	1	

Work Category	Resource	Weighting %
3/10	Labour: building	49
	Plant	1
	Blocks	22
	Facing bricks	13
	Common bricks	6
	Engineering bricks	3
	Fletton bricks	2
	Cement	2
	Sand	1
	Lime	1
3/11	Labour: building	26
	Plant	1
	Natural stone	30
	Cast stone	40
	Fixings	2
	Sealants	1
3/12	Labour: building	45
	Plant	2
	Softwood	47
	Fixings	4
	Plywood	1
	Adhesives	1
3/13	Labour: building	19
	Plant	6
	Metal decking	69
	Fixings	6
3/14	Labour: building	26
	Plant	1
	Steel angles and tees	27
	Bolts	15
	Steel tubes	11
	Cast iron products	6
	Stainless steel angles	6
	Steel sheets and plates	6
	Aluminium sections	2
3/15	Labour: building	19
	Plant	1
	Glass	49
	Framing members	18
	Finishes to framing	9
	Flashings	2
	Sealants	1
	Fixings	1
3/16	Labour: building	17
	Plant	6
	Fibre cement profiled sheets	48
	Coated steel sheets	11
	Insulation	8
	Aluminium sections	4
	Sealants	4
Fixings	2	
3/17	Labour: building	22
	Plant	1
	Coated steel sheets	41
	Plastic coating	21
	Insulation	5
	Steel sections	4
	Sealants	2

Work Category	Resource	Weighting %
3/18	Labour: building	17
	Plant	5
	Plastics profiled sheets	68
	Metal discs	4
	Sealants	4
	Fixings	2
3/19	Labour: building	53
	Plant	2
	Polyester resin	24
	Polyurethane core	10
	Glass fibre mat	8
	Timber	1
	Sealants	1
	Fixings	1
3/20	Labour: building	23
	Plant	1
	Concrete tiles	33
	Slates	11
	Battens	9
	Underlay	8
	Clay tiles	7
	Fibre cement slates	5
	Fixings	3
3/21	Labour: plumbing	51
	Plant	1
	Lead sheets	47
	Copper fixings	1
3/22	Labour: building	14
	Plant	1
	Aluminium sheets	72
	Fixings	4
	Insulation	4
	Aluminium sections	4
	Sealants	1
3/23	Labour: building	43
	Plant	1
	Copper sheets	} 56
	Fixings	
3/24	Labour: building	43
	Plant	1
	Zinc sheets	} 56
	Fixings	
3/25	Labour: building	27
	Plant	26
	Asphalt	39
	Felt	6
	Reflective finish	1
	Chippings	1
3/26	Labour: building	29
	Plant	2
	Bitumen	25
	Roofing felt	21
	Fibreboard	11
	Polystyrene	5
	Aluminium trim	3
	Fibre cement tiles	3
	Chippings	1

Work Category	Resource	Weighting %
3/27	Labour: building	54
	Plant	2
	Waterproof coatings	44
3/28	Labour: building	43
	Plant	2
	Softwood	40
	Softwood fittings	11
	Fixings	3
	Mastic	1
3/29	Labour: building	38
	Plant	1
	Hardwood	36
	Hardwood board flooring	10
	Hardwood fittings	9
	Hardwood strip flooring	2
	Fixings	3
	Mastic	1
3/30	Labour: building	47
	Plant	1
	Manufactured boards	23
	Woodwool slabs	10
	Plywood and blockboard	9
	Insulation board	6
	Fixings	3
	Mastic	1
3/31	Labour: building	49
	Plant	1
	Plasterboard	31
	Joint filler	6
	Metal components	5
	Insulation	4
	Timber	3
	Fixings	1
3/32	Labour: building	21
	Plant	1
	Manufactured boards	29
	Steel components	10
	Aluminium components	8
	Plastics finishes	6
	Doors	6
	Plasterboard	5
	Timber	4
	Glass	4
	Insulation	2
	Fixings	3
	Mastics	1
3/33	Labour: building	41
	Plant	1
	Mineral fibre tiles	22
	Suspension and framing members	16
	Plasterboard	8
	Metal panels and strips	7
	Fibre cement panels	2
	Metal components	2
	Decorative plastics	1

Work Category	Resource	Weighting %
3/34	Labour: building	26
	Plant	2
	Floor panels: metal	32
	Floor panels: boards	22
	Plastics components	10
	Pedestals	6
	Adhesives	2
3/35	Labour: building	26
	Plant	1
	Softwood windows and doors and frames	70
	Fixings	2
	Sealants	1
3/36	Labour: building	21
	Plant	1
	Hardwood windows and doors and frames	75
	Fixings	2
	Sealants	1
3/37	Labour: building	19
	Plant	1
	Steel windows and doors	79
	Sealants	1
3/38	Labour: building	21
	Plant	1
	Aluminium windows and doors	77
	Sealants	1
3/39	Labour: building	38
	Plant	1
	Plastics windows and doors	55
	Fixings	3
	Sealants	3
3/40	Labour: building	34
	Ironmongery	64
	Fixings	2
3/41	Labour: building	32
	Sheet glass	37
	Double glazing units	19
	Toughened glass	8
	Mirrors	2
	Glazing compounds	2
3/42	Labour: building	46
	Plant	4
	Cement	29
	Sand	16
	Lightweight aggregates	3
	Bonding agents	1
	Steel sundries	1
3/43	Labour: building	45
	Resins	41
	Bitumen	11
	Fillers	3

Work Category	Resource	Weighting %
3/44	Labour: building	72
	Plant	3
	Plaster	21
	Metal beads	1
	Sand	1
	Cement	1
	Precast plaster mouldings	1
3/45	Labour: building	34
	Glazed tiles	27
	Quarry tiles	20
	Terrazzo tiles	11
	Adhesives	5
	Cement	3
3/46	Labour: building	30
	Plastics tiles or sheet	67
	Adhesives	3
3/47	Labour: building	12
	Seamed carpets	53
	Broadloom carpets	34
	Fixings	1
3/48	Labour: building	82
	Emulsions	8
	Oil paints	7
	Decorative papers and fabrics	1
	Filling and stopping	1
	Plastics based paints	1
3/49	Labour: plumbing	36
	Ceramic sanitary ware	23
	Steel sanitary ware	20
	Plastics sanitary ware	11
	Taps, valves, wastes, etc	10
3/50	Labour: building	30
	Glass fibre	30
	Polystyrene	24
	Pipe insulation	9
	Plastics foams	5
	Fixings	1
	Adhesives	1
3/51	Labour: building	14
	Plant	7
	Coated macadam	67
	Asphalt	12
3/52	Labour: building	33
	Plant	4
	Concrete slabs and blocks	36
	Clay bricks	8
	Stone slabs	6
	Kerbs, edgings and channels	5
	Sand	4
	Cement	2
	Lime	2
3/53	Labour: building	24
	Plant	11
	Trees and shrubs	59
	Grass seed	6

Work Category	Resource	Weighting %
3/54	Labour: building	28
	Plant	2
	Softwood posts, rails and boarding	17
	Chain link fencing	16
	Steel units	15
	Concrete posts	12
	Hardwood posts, rails and boarding	7
	Fixings	1
	Aggregates	1
	Cement	1
	3/55	Labour: plumbing
Cast iron pressure pipes and fittings		24
Spun iron pressure pipes and fittings		22
Cast iron drain pipes and fittings		12
Lead		1
3/56	Labour: plumbing	39
	Tanks	42
	Steel pipes and fittings	19
3/57	Labour: plumbing	53
	Plastics pipes and fittings	41
	Tanks	6
3/58	Labour: plumbing	38
	Copper pipes	22
	Copper fittings	21
	Copper cylinders	15
	Plumbers' brassware	4
3/59	Labour: plumbing	35
	Aluminium pipes and fittings	65
3/60	Labour: building	29
	Plant	2
	Clay pipes and fittings	51
	Concrete pipes and fittings	16
	Sand	1
	Cement	1

Appendix B-1: List of Work Categories (Series 2 revised) (rule 3)

- 2/1 Demolitions
- 2/2 Site preparation, excavation and disposal
- 2/3 Hardcore and imported filling
- 2/4 General piling
- 2/5 Steel sheet piling
- 2/6 Concrete
- 2/7 Reinforcement
- 2/8 Structural precast and prestressed concrete units
- 2/9 Non-structural precast concrete components
- 2/10 Formwork
- 2/11 Brickwork and blockwork
- 2/12 Natural stone
- 2/13 Asphalt work
- 2/14 Slate and tile roofing
- 2/15 Asbestos cement sheet roofing and cladding
- 2/16 Plastic coated steel sheet roofing and cladding
- 2/17 Aluminium sheet roofing and cladding
- 2/18 Built-up felt roofing
- 2/19 Built-up felt roofing on metal decking
- 2/20 Carpentry, manufactured boards and softwood flooring
- 2/21 Hardwood flooring
- 2/22 Tile and sheet flooring
- 2/23 Jointless flooring (epoxy resin type)
- 2/24 Softwood joinery
- 2/25 Hardwood joinery
- 2/26 Ironmongery
- 2/27 Steelwork
- 2/28 Steel windows and doors
- 2/29 Aluminium windows and doors
- 2/30 Miscellaneous metalwork
- 2/31 Cast iron pipes and fittings
- 2/32 Plastic pipes and fittings
- 2/33 Copper tubes, fittings and cylinders
- 2/34 Mild steel pipes, fittings and tanks
- 2/35 Boilers, pumps and radiators
- 2/36 Sanitary fittings
- 2/37 Insulation
- 2/38 Plastering (all types) to walls and ceilings
- 2/39 Beds and screeds (all types) to floors, roofs and pavings
- 2/40 Dry partitions and linings
- 2/41 Tiling and terrazzo work
- 2/42 Suspended ceilings (dry construction)
- 2/43 Glass, mirrors and patent glazing
- 2/44 Decorations
- 2/45 Drainage pipework (other than cast iron)
- 2/46 Fencing, gates and screens
- 2/47 Bituminous surfacing to roads and paths
- 2/48 Soft landscaping
- 2/49 Leadwork

Appendix B-2: 'Fix-only' indices (Series 2 revised) (rule 8(iii))

A (1) Where there is a significant value of work in respect of items of 'fix-only' falling within one Work Category, it may be appropriate to create a special 'fix-only' index. Such items must be identified in the Schedule and shall be subject to adjustment in accordance with the Formula Rules so far as relevant and applicable as if 'fix-only' in each Work Category were a separate Work Category.

(2) The calculation of a 'fix-only' Index Number is demonstrated by the following example for the fixing only of precast concrete structural units which are supplied against a P.C. rate/P.C. Sum.

(a) 'Price adjustment formulae for building contracts (Series 2 revised) — Description of the indices' published by HMSO sets out the resources for Work Category 2/8 'Structural precast and prestressed concrete units' weighted in terms of percentage value as follows:

Labour (skilled)	6%
Labour (unskilled)	6%
Plant	6%
Structural precast concrete	79%
Cement	2%
Aggregate	1%
Sand	*(less than 0.5%)
Reinforcement	*(less than 0.5%)
	<u>100%</u>

(b) The published Index Numbers for a specified month are say, 158 skilled labour, 158 unskilled labour and 170 plant.

(c) A 'fix-only' Index Number for that month of the labour and plant required for fixing only precast concrete structural units may be calculated as follows:

Skilled labour	6 x 158 =	948
Unskilled labour	6 x 158 =	948
Plant	6 x 170 =	1020
Total percentage	<u>18</u>	<u>2916</u>
'Fix-only' Index Number for fixing only precast concrete structural units		$\frac{2916}{18} = 162$

(d) It will be necessary to calculate the 'fix-only' Index Number for the Base Month and for each month in which the Index Number is subsequently to be used.

(3) The 'fix-only' Index Numbers so calculated are to be applied to the value of the 'fix-only' items and no separate adjustment made for the ancillary materials (cement, aggregate, etc.).

- B** The percentages of skilled labour, unskilled labour and plant for each Work Category and which will be needed for calculating a 'fix-only' Index Number are set out below.
(Source: 'Price adjustment formulae for building contracts (Series 2 revised) — Description of the indices')

Work Category	Resource	%
2/1	Labour (skilled)	36
	Labour (unskilled)	14
	Plant	44
2/2	Labour (skilled)	1
	Labour (unskilled)	37
	Plant	56
2/3	Labour (unskilled)	28
	Plant	11
2/4	Labour (skilled)	32
	Labour (unskilled)	7
	Plant	22
2/5	Labour (skilled)	6
	Labour (unskilled)	7
	Plant	23
2/6	Labour (skilled)	5
	Labour (unskilled)	26
	Plant	3
2/7	Labour (skilled)	16
	Labour (unskilled)	8
2/8	Labour (skilled)	6
	Labour (unskilled)	6
	Plant	6
2/9	Labour (skilled)	17
	Labour (unskilled)	23
2/10	Labour (skilled)	53
	Labour (unskilled)	11
	Plant	1
2/11	Labour (skilled)	37
	Labour (unskilled)	17
	Plant	1
2/12	Labour (skilled)	16
	Labour (unskilled)	15
2/13	Labour (skilled)	20
	Labour (unskilled)	9
	Plant	29
2/14	Labour (skilled)	13
	Labour (unskilled)	10
2/15	Labour (skilled)	13
	Labour (unskilled)	15
2/16	Labour (skilled)	9
	Labour (unskilled)	10
2/17	Labour (skilled)	6
	Labour (unskilled)	7
2/18	Labour (skilled)	23
	Labour (unskilled)	12

Work Category	Resource	%
2/19	Labour (skilled)	19
	Labour (unskilled)	7
2/20	Labour (skilled)	40
	Labour (unskilled)	7
2/21	Labour (skilled)	27
2/22	Labour (skilled)	26
2/23	Labour (skilled)	35
2/24	Labour (skilled)	34
	Labour (unskilled)	3
2/25	Labour (skilled)	25
	Labour (unskilled)	2
2/26	Labour (skilled)	31
	Labour (unskilled)	2
2/27	Labour (skilled)	9
	Labour (unskilled)	15
2/28	Labour (skilled)	15
	Labour (unskilled)	9
2/29	Labour (skilled)	16
	Labour (unskilled)	7
2/30	Labour (skilled)	7
	Labour (unskilled)	15
2/31	Labour (Plumbing)	37
2/32	Labour (Plumbing)	48
2/33	Labour (Plumbing)	34
2/34	Labour (Plumbing)	33
2/35	Labour (Plumbing)	23
2/36	Labour (Plumbing)	30
2/37	Labour (skilled)	29
	Labour (unskilled)	9
2/38	Labour (skilled)	49
	Labour (unskilled)	22
	Plant	3
2/39	Labour (skilled)	26
	Labour (unskilled)	22
	Plant	5
2/40	Labour (skilled)	42
	Plant	1
2/41	Labour (skilled)	26
	Labour (unskilled)	8
2/42	Labour (skilled)	32
2/43	Labour (Glazing)	31
2/44	Labour (skilled)	80

Work Category	Resource	%
2/45	Labour (skilled)	15
	Labour (unskilled)	14
2/46	Labour (skilled)	9
	Labour (unskilled)	16
	Plant	1
2/47	Labour (skilled)	11
	Labour (unskilled)	5
	Plant	8
2/48	Labour (skilled)	37
	Labour (unskilled)	11
	Plant	22
2/49	Labour (skilled)	40



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